A Guide to Some Common Plants of the Southern Interior of British Columbia

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A Guide to Some Common Plants of the Southern Interior of British Columbia

Compiled by
Karen Angove and Bryce Bancroft

Sponsored by
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Kamloops Forest Region

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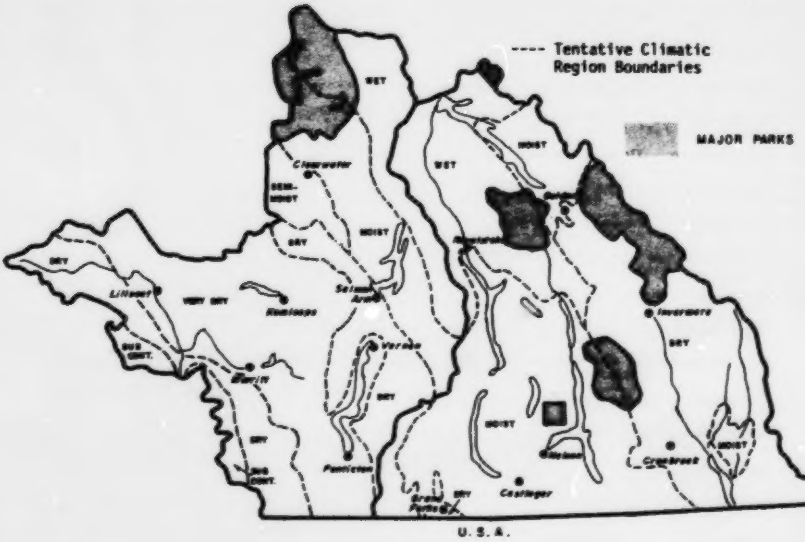
KAMLOOPS - NELSON

FOREST REGIONS


---- Tentative Climatic Region Boundaries
MAJOR PARKS
WET
MOIST
WET
Clearwater
SEMI-MOIST
DRY
MOIST
Golden
Revelstoke
DRY
Lillooet
VERY DRY
Kamloops
Salmon Arm
Invermere
Vernon
DRY
SUB CONT.
Merritt
DRY
DRY
MOIST
DRY
SUB CONT.
Penticton
Nelson
Cranbrook
MOIST
Grand Forks
DRY
Castlegar
U.S.A.

Dawson Creek
ALBERTA
Prince Rupert
Prince George
Queen Charlotte Islands
Vancouver Island
Victoria
U.S.A.

INTRODUCTION

PURPOSE

This guide gives an account of forest and grassland plants which are commonly encountered in the southern interior of British Columbia * (see map). It is intended to accompany such guides as the "Identification and Interpretation of Ecosystems of the Western Kamloops Forest Region", Vol. 1 and 2 (Mitchell et al., 1981) and "Ecological Classification for the Nelson Forest Region" (Utzig et al., 1982, Second Approx.) to aid in the vegetative component of ecosystem classification.

SCOPE AND LIMITATIONS

This guide describes over 300 plant species which occur in the southern interior of British Columbia. It is intended for use by non-professional botanists, foresters, and other resource managers, as a guide or tool to identify common plant species, and is not intended as a final word on the identification of all species described within. In cases of uncertainty, the plant should be collected and keyed out using a more authoritative publication (.e.g. Hitchcock et al., 1969), or be sent to the Research Section in the Kamloops or Nelson Forest Regions to be identified. Methodology for collecting and pressing plant specimens is described in Appendix I.

The species described in this guide are presented in order of strata, i.e. trees (A layer), shrubs (B layer), herbaceous plants (C layer), bryophytes and lichens (D layer). In ecosystem descriptions (Mitchell et al., 1981; Utzig et al., 1982), some low shrubs are included in the C layer. A list of these exceptions may be found in Appendix II, however in this guide, all true shrubs will be found in the shrub section. The trees, shrubs and ferns are arranged alphabetically by genus and species. The herbaceous plants are grouped by families and are presented in alphabetical order by their family and then by genus and species. The section "Other Herbaceous Plants", consisting of species not found in the most common plant families, are arranged alphabetically by genus and species as are the bryophytes and lichens. Nomenclature follows that of Taylor and MacBryde (1977) for vascular plants; Crum, Steere and Anderson (1973) for mosses; and Hale and Culberson (1970) for lichens. Common names follow those of Taylor and MacBryde (1977) with some local additions.

For each species there is a line drawing, a general habit description, and a description of leaves, flowers, fruit and in some cases, habitat and edibility. Edibility is mentioned primarily for plants with berries or berry-like fruits. For additional information consult the references cited in the acknowledgements. **Bold face type** is used to emphasize differentiating characteristics between species of the same genus or distinctive features of the plant described. A glossary is provided to help clarify the meaning of any technical terms used in the text.

Where enough information was available, the habitat is presented in a grid format. The grid (Figure 1) shows the distribution of the species within each biogeoclimatic subzone along a gradient of ecological moisture regime, i.e. xeric (dry) to subhydric (wet). Subzones included are from the Kamloops region only, their abbreviations are explained in Appendix II. Similar information can be obtained from the Nelson Region upon request. (For further clarification of ecological moisture regime see Figure 1.1).

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* Weedy plants are included where it is felt they are pertinent (e.g. *Centaurea diffusa*, Knapweed).

e.g. *Pinus ponderosa*

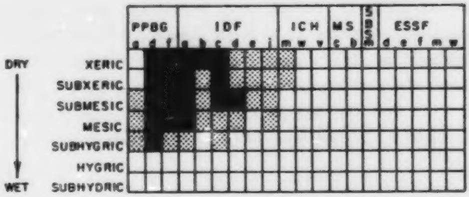


Figure 1

The darkened areas of the grid indicate where the plant is more common and abundant; the dotted areas indicate where the plant has limited distribution and abundance. Successional species may be poorly represented due to lack of data.

The information on these grids has been assembled from data collected and field observations made by the Kamloops Research Section of the B.C. Ministry of Forests.

To illustrate the distribution and relative moisture regime of the biogeoclimatic units (subzones) identified in the Kamloops Region, the two following schematic toposequence diagrams (Figure 2) are included. For further explanation, consult "Identification and Interpretations of Ecosystems of the Western Kamloops Forest Region", Vol. 1 and 2 (Mitchell et al., 1981) or contact the Research Section in Kamloops. Biogeoclimatic maps (1:100,000 and 1:125,000) showing the distribution of the subzones within the Kamloops and Nelson Regions are available upon request.

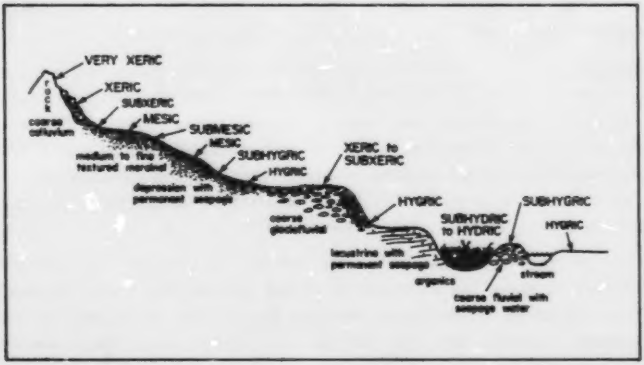

VERY XERIC
XERIC
SUBXERIC
MESIC
SUBMESIC
MESIC
SUBHYGRIC
HYGRIC
rock
coarse colluvium
medium to fine textured morainal
depression with permanent seepage
XERIC to SUBXERIC
coarse glaciofluvial
HYGRIC
lacustrine with permanent seepage
SUBHYDRIC to HYDRIC
organics
SUBHYGRIC
HYGRIC
stream
coarse fluvial with seepage water

Figure 1.1

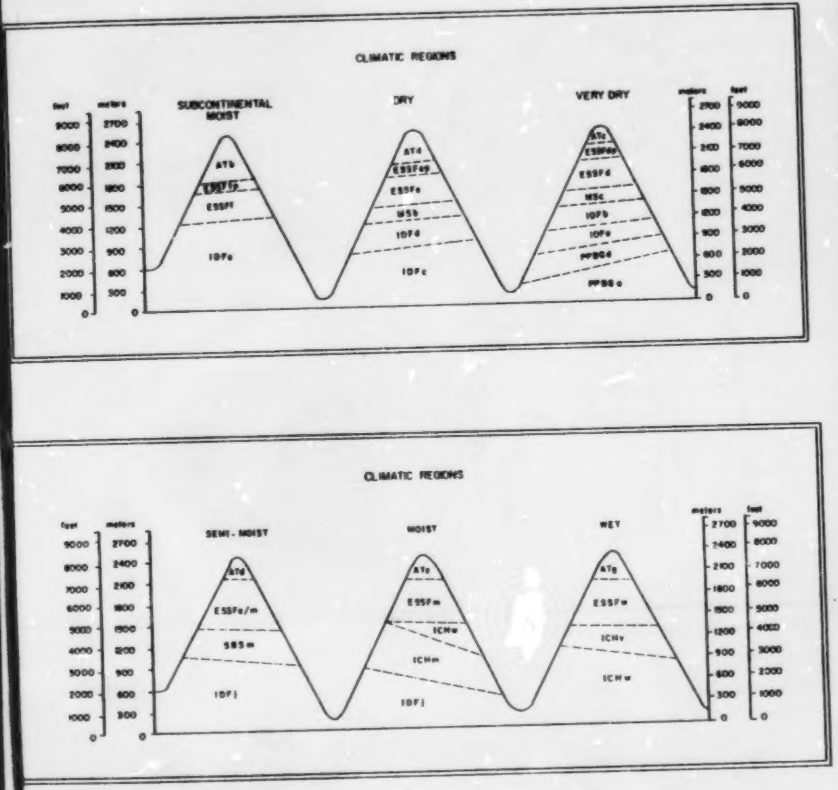
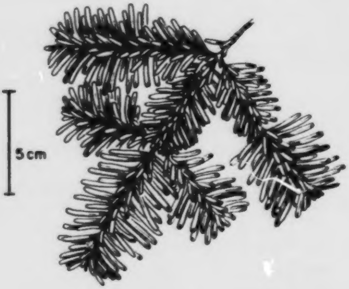

CLIMATIC REGIONS
feet
meters
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
2700
2400
2100
1800
1500
1200
900
600
300
0
SUBCONTINENTAL MOIST
ATb
ESSFf
IDFe
DRY
ATd
ESSFe
MSb
IDFd
IDFc
VERY DRY
ATc
ESSFd
MSc
IDFb
IDFa
PPBGd
PPBGa
CLIMATIC REGIONS
SEMI-MOIST
ATd
ESSFe/m
SBSm
IDFj
MOIST
ATe
ESSFm
ICHw
ICHm
IDFj
WET
ATg
ESSFw
ICHv
ICHw

FIGURE 2: Toposequence diagrams showing the elevational relationships of subzones within each climatic region.

Abies amabilis (Pacific silver fir)



PINACEAE

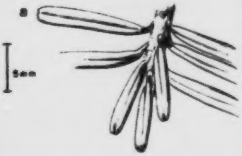
TREE - up to 50-70 m tall.

BRANCHES - flattened, spray-like.

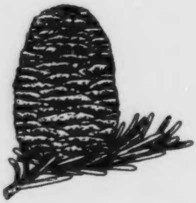
LEAVES - **shiny, dark green above, two silvery bands of stomata below,** nearly flat; **mostly notched** (a) **needles** spreading horizontally or somewhat erect to pressed to upper side of branches and pointing forward; needles relatively long and broad on cone bearing branches; upper needles strongly appressed mostly parallel to twig due to **twisted needle base.**

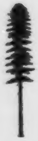
CONES - erect, usually near top of tree.

HABITAT - found mainly in coastal forests on a variety of soils; occasionally in pure stands, usually mixed with other species of conifers.

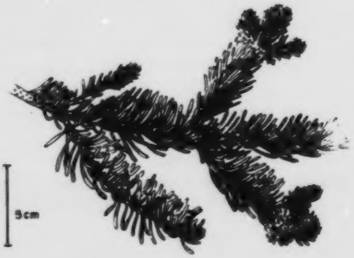


	PPBG			IDF						ICH			MS		SBS	ESSF				
	g	d	f	a	b	c	d	e	j	m	w	v	c	b	m	d	e	f	m	w
X																				
SX																		▨		
SM																		■		
M								▨										■		
SHG								▨										■		
HG								▨										▨		
SHD																				





Abies lasiocarpa (Subalpine fir)



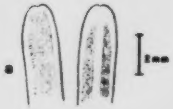
PINACEAE

TREE - rarely over 30 m tall.

BRANCHES - not spray-like.

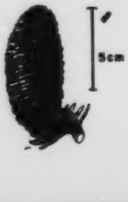
LEAVES - **bluish-green with silvery bands of stomata on both surfaces** (a); **mostly blunt,** sometimes notched, all tending to turn upwards; needles stalkless, relatively short and narrow on cone bearing branches only; **needle bases not twisted;** needles leave circular scars when removed.

CONES - erect, usually near top of tree, similar to *Abies amabilis.*



HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
	g	d	f	a	b	c	d	e	j	m	w	v	c	b	m	d	e	f	m	w
X											▨	▨		▨	■	■	■	■	■	■
SX								▨	▨	▨	▨	▨	▨	▨	■	■	■	■	■	■
SM								▨	▨	▨	▨	▨	■	■	■	■	■	■	■	■
M							▨	■	▨	▨	▨	▨	■	■	■	■	■	■	■	■
SHG					▨		▨	■	■	▨	■	■	■	■	■	■	■	■	■	■
HG					▨		▨	■	■	■	■	■	■	■	■	■	■	■	■	▨
SHD								▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨



ula papyrifera (Common paper birch)

ULACEAE

E - up to 30 m tall.

RK - readily to tardily peeling, white ooth and marked with brown horizontally ongated lenticels.

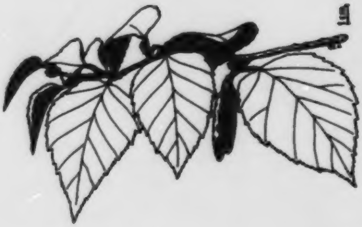
AVES - narrowly egg-shaped to nearly und, sharp-pointed, serrate, usually 15-20 eth per side, sometimes very shallowly bed; upper surface greener than lower rface, smooth to hairy; lower surface sually hairy with hairs tufted in axils of arger lateral veins toward base of eaf (a).

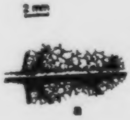
RUIT - nutlet having wing broader than ody.

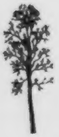
ABITAT - thrives on burned-over and cut-ver areas; as forest matures becomes estricted to openings.

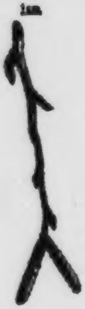
	PPBG			IDF						ICH			MS		SBS	ESSF				
	g	d	f	a	b	c	d	e	j	m	w	v	c	b	m	d	e	f	m	w
X																				
SX								▨	■	■	▨				▨					
SM							▨	▨	■	■	▨				▨					
M							▨	▨	■	■	▨			▨	▨					
SHG				▨		▨	▨	▨	■	▨	▨			▨	▨					
HG	▨	▨	▨	▨		▨	▨	▨	▨	▨	▨									
SHD																				

NOTE: When young this species is confused with *Corylus cornuta*.









Juniperus scopulorum (Rocky Mountain juniper)

CUPRESSACEAE

TREE - small, up to 10 m tall, more commonly a sprawling shrub.

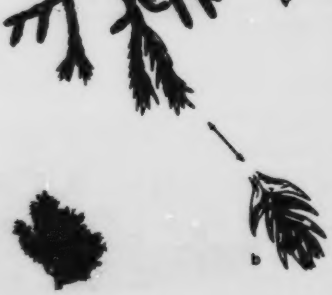
BARK - thin, red-brown to grey-brown, shallowly furrowed.

LEAVES - mature are scale-like (a), while juvenile leaves are needle-like (b) similar to *J. communis*.

FRUIT - fleshy green to dark blue berry (when mature) lacking an opening at the end, usually with a silvery coating which rubs off.

HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
	g	d	f	a	b	c	d	e	j	m	w	v	c	b	m	d	e	f	m	w
X				■	▨	▨	▨	▨	▨											
SX			▨	■	▨	▨	▨		▨											
SM		▨	▨	■	▨	▨	▨													
M	▨	▨																		
SHG																				
HG																				
SHD																				



Larix occidentalis (Western larch)

PINACEAE

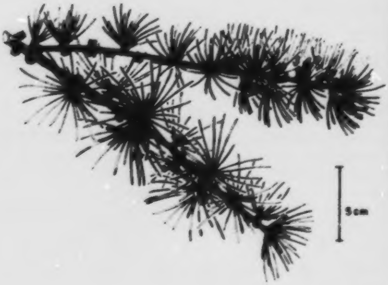
TREE - 30 to 45 m tall.

BRANCHES - have characteristic spur shoots (a) (dwarf twigs); young branches glabrous to pubescent.

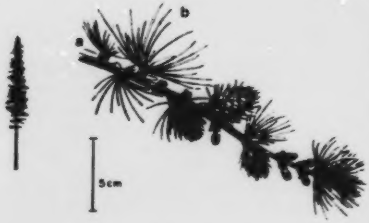
LEAVES - **deciduous;** needles, pale yellow-green, 3-sided in cross section, in clusters of 15 to 30 on spur shoot (b).

CONES - female cones oval when closed, egg-shaped when open; 2.5 to 4 cm long; bracts with long slender tip extending beyond scales.

HABITAT - found mainly in the eastern Okanagan and east Kootenays.



	PPBG			IDF						ICH			MS		SBS	ESSF				
	a	d	f	a	b	c	d	e	j	m	w	v	c	b	m	d	e	f	m	w
X																				
SX										■				■						
SM				▨	■				■	■				■						
M				▨	■				■	■				■						
SHG									■											
HG																				
SHD																				



NOTE: *L. lyallii* is a similar subalpine/alpine species, has densely hairy young branches and four-sided needles.

Picea engelmannii (Englemann spruce)

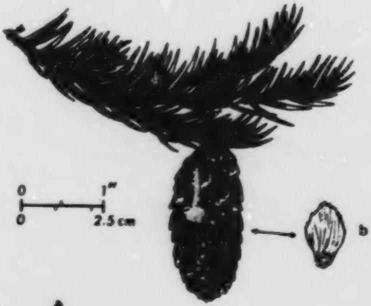
PINACEAE

TREE - straight, spire-like, up to 50 m tall.

BRANCHES - **young twigs hairy** (a), **occasionally glabrous.**

LEAVES - 4-sided, all on upper side of branch, sharp but not particularly stiff.

CONES - **scales blunt to sharp-pointed, finely irregular wavy margined** (b); cones 4-5 cm long.



HABITAT

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SX								▨	▨	▨	▨	▨	▨	▨	■	■	■	■	■	■
SM					▨		▨	▨	▨	▨	▨	▨	■	■	■	■	■	■	■	■
M					▨		▨	■	▨	▨	▨	■	■	■	■	■	■	■	■	■
SHG					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
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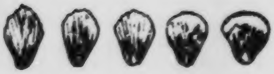
SHD				▨	▨				▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨

NOTE: **Commonly hybridizes with *Picea glauca* below 1500 m. This grid illustrates both *P. engelmannii* and *P. engelmannii X glauca*.**



Picea engelmannii X *Picea glauca*

Picea glauca (White spruce)

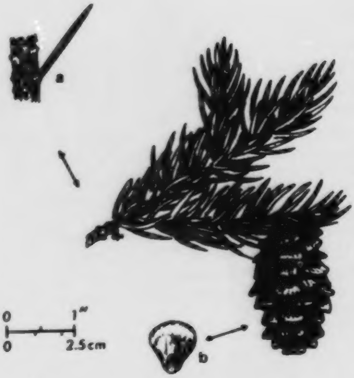
PINACEAE

TREE - stunted to erect, up to 25 m tall.

BRANCHES - **young twigs smooth and shiny, not hairy** (a).

LEAVES - 4-sided, tending to project from all sides of the branches, somewhat sharply pointed.

CONES - **scales elliptical, rounded to blunt at tip** (b) and stiffer than those of *P. engelmannii* cones; cones 2.5 - 3.5 (6) cm long.



HABITAT

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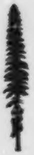


NOTE: In our region it is mostly hybridized with *Picea engelmannii.*

Picea mariana (Black spruce)

PINACEAE

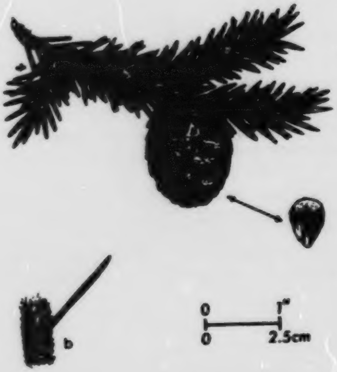
TREE - up to 20 m tall.

BRANCHES - dead or over-mature trees often have dense clusters of branchlets near top (a); **young twigs hairy and glandular** (b).

LEAVES - 4-sided, standing out on all sides or mostly pointed upwards, sharply pointed.

CONES - female cones persistent, **scales irregularly toothed,** broadly rounded at tip; cones 1.5-3.0 cm long.

HABITAT - wet meadows, bogs and upland sites near bogs in central and northern B.C.



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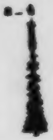


Pinus albicaulis (Whitebark pine)

PINACEAE

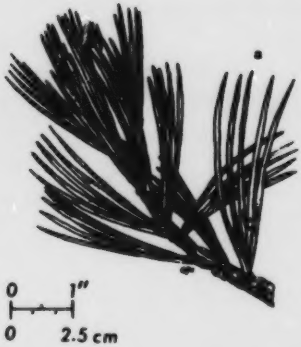
TREE - usually dwarfed, 5 to 15 m tall, often reduced to a shrub in exposed areas.

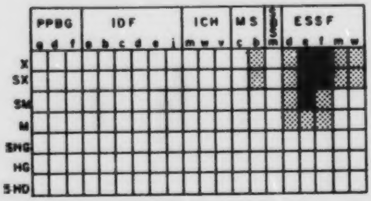
BRANCHES - usually ascending; young twigs pubescent.

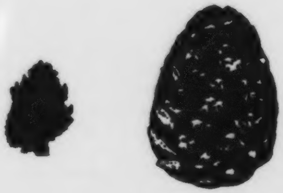
LEAVES - **in bundles of 5** (a), 4 to 7 cm long; bluish-green, stiff and slightly curved; not toothed; clustered towards the ends of branchlets.

CONES - egg-shaped to globular, 5 to 8 cm long; **disintegrate when mature**; have scales with blunt triangular tips but no prickles.

HABITAT - usually occurs above 1500 m; grows on exposed slopes and rocky ridges near upper tree line.







Pinus contorta var. latifolia (Lodgepole pine)

PINACEAE

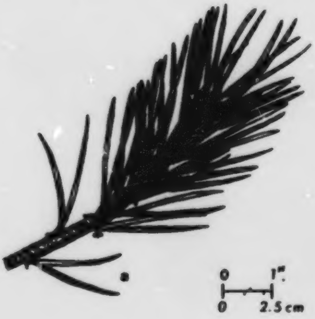
TREE - mostly 20 to 35 m tall.

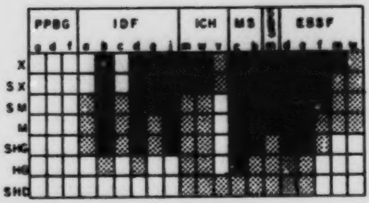
BRANCHES - stout twigs, orange when young becoming grey-brown and rough.

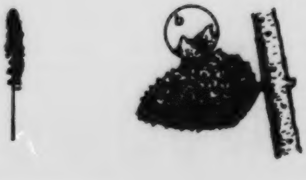
LEAVES - **needles in two's** (a), 3 to 6 cm long, deep green to yellowish-green, often curved.

CONES - egg-shaped, usually slightly curved, 3 to 6 cm long; scales narrow, purplish-brown with a sharp-spined tip (b).

HABITAT - establishes readily after fires; tolerates droughty, low nutrient conditions.







Pinus monticola (Western white pine)

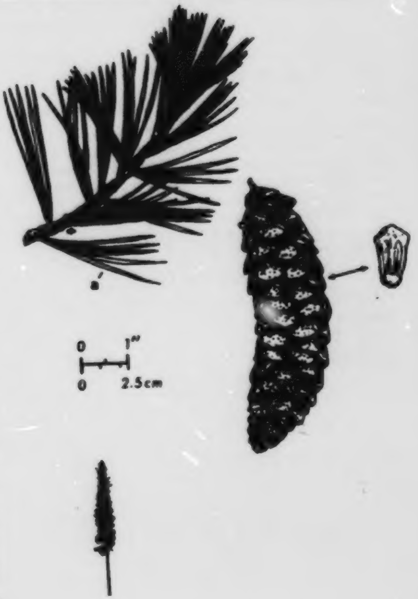
PINACEAE

TREE - usually up to 30 m tall.

BRANCHES - horizontal, conspicuously whorled.

LEAVES - needles in **bundles of 5** (a); slender 5 to 10 cm long, soft to touch, small teeth on margins of needles.

CONES - cylindrical when closed, pendant 15 to 25 cm long; scales thin, broadening upwards, deep red to chocolate-brown below the usually yellowish-brown tip; no prickles.



HABITAT

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NOTE: Can be confused with *Pinus albicaulis* at higher elev. except *P. albicaulis* does not have teeth on needles.

Pinus ponderosa (Ponderosa pine, Yellow pine)

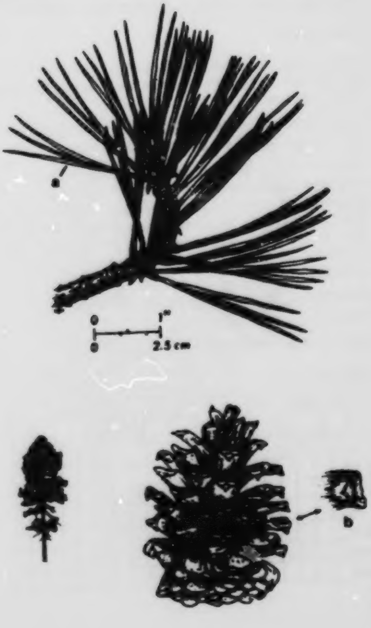
PINACEAE

TREE - usually up to 25 to 30 m tall, with peculiar "jig-saw puzzle" bark.

BRANCHES - usually short and stout on mature trees.

LEAVES - usually in **bundles of 3** (a), 12 to 20 cm long, in clusters towards the ends of branches; dark yellowish-green.

CONES - cylindrical to narrowly oval when closed, 8 to 14 cm long; scales thickened at tips bearing sharp prickles (b).



HABITAT

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SX		■	■	■	▨	■	▨	▨	▨	▨										
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Populus balsamifera ssp. *trichocarpa* (Black cottonwood)

SALICACEAE

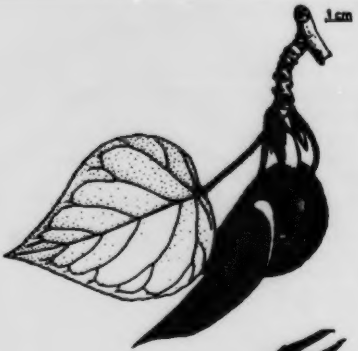
TREE - up to 40 m tall.

BARK - old bark deeply furrowed, dark grey.

LEAVES - egg-shaped, rounded to heart-shaped at base, sharp-pointed at tip, pale and often stained with patches of brown resin beneath, margin finely round-toothed; **petiole** 1/3 to 1/2 as long as blade, **cylindrical**, often with a pair of glands at the junction with the blade; leaf not fluttering in light breeze.

BUDS - **very resinous and fragrant.**

FLOWERS - in catkins, both male (a) and female.



HABITAT

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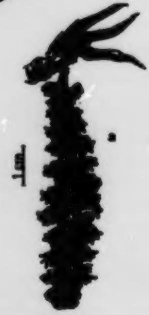


Populus tremuloides (Trembling aspen)

SALICACEAE

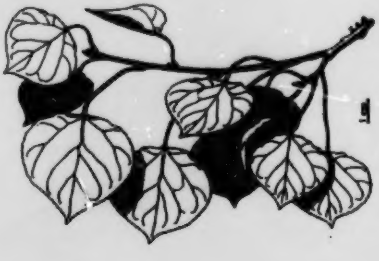
TREE - up to 25 m tall, tends to multiply by growth of suckers from extensive shallow root system.

BARK - white turning blackish and somewhat roughened at base of tree with age.

LEAVES - egg-shaped to nearly circular, rounded to square-cut at base, sharp-pointed at tip, paler beneath, margins round-toothed; petiole laterally flattened, 2/3 as long as blade allowing the leaf to tremble in the slightest breeze; without glands.

FLOWERS - in catkins, both male (a) and female.

BUDS - **not resinous or fragrant.**



HABITAT

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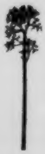
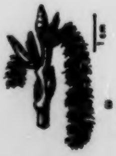




Pseudotsuga menziesii var. _glauca_
(Douglas fir)

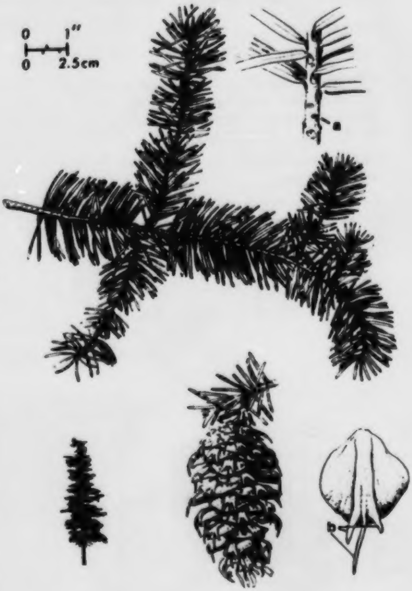
PINACEAE

TREE - up to 42 m.

BRANCHES - buds sharp pointed, shiny reddish-brown; branches horizontal or ascending when young, drooping with age.

LEAVES - flat, linear needles, not as pointed as *Picea* needle tips, bases narrowed into a short petiole; bluish-green upper surface, two stomatal bands on lower surface, needles leave oval scars when removed (a).

CONES - narrowly oval, 5 to 11 cm long with **prominent 3-pronged bracts** (b), protruding beyond the rounded scales.



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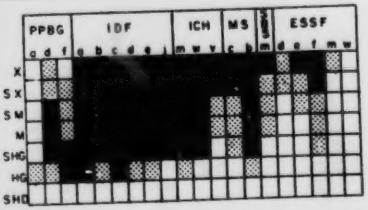

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SX		▨	▨	■	■	■	■	■	■	■	■	■	■	■	▨	▨	▨	■		
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SHG		■	■	■	■	■	■	■	■	■	■		▨	■				▨		
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SHD																				

Taxus brevifolia (Western yew)

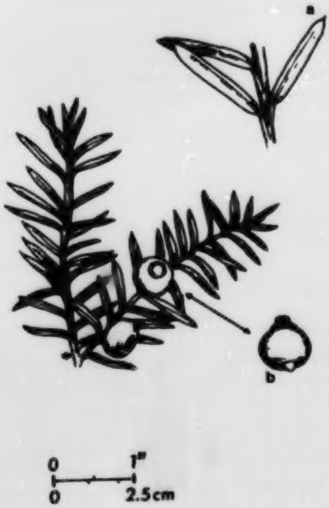
TAXACEAE

TREE - short, often shrub-like, 5 to 10 m tall; trunk often twisted and fluted.

BRANCHES - slender, horizontally spreading with flat or slightly drooping branchlets.

LEAVES - needle-like, dark green above, light green below; spirally arranged with twisted leaf stalks to appear two-ranked; abruptly sharp pointed (a).

FRUIT - female, a single seed covered by a red fleshy body with an opening at its tip through which the "stone" is exposed (b).



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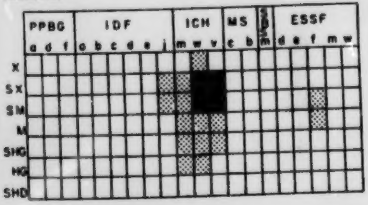

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Thuja plicata (Western red cedar)

CUPRESSACEAE

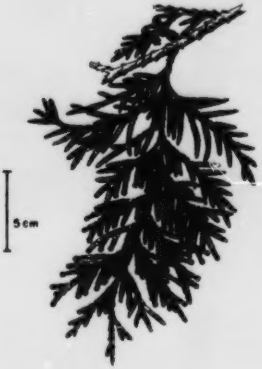
TREE - up to 70 m tall.

BRANCHES - tending to spread or droop slightly and then upturn; branchlets spray like, strongly flattened tending to be positioned horizontally.

BARK - tearing off in long thin strips, reddish brown.

LEAVES - at first lustrous or somewhat yellowish-green, becoming brown and largely deciduous in 3-4 years, partly overlapping in shingled arrangement.

CONES - female cones egg-shaped, 8-10 mm long (a).



HABITAT

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SHG						■	▨	■	■	■	■	■		▨	▨					
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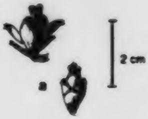


Tsuga heterophylla (Western hemlock)

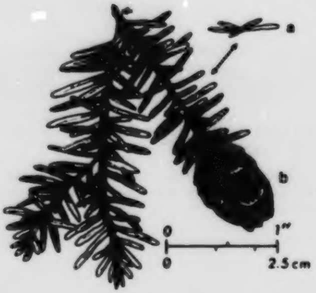
PINACEAE

TREE - 30-50 m tall, drooping leader.

BRANCHES - mostly drooping

LEAVES - glossy and yellow-green on upper surface, white over most of lower surfaces, markedly unequal in length, usually at right angles to branches to form flat sprays (a).

CONES - female cones egg-shaped, 1.5-2.5 cm in length (b).



HABITAT

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Tsuga mertensiana (Mountain hemlock)

PINACEAE

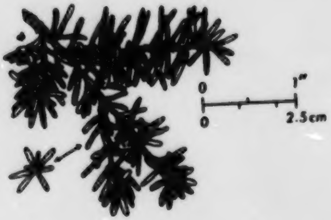
TREE - erect, rarely 30-40 m tall, often stunted at higher elevations; leader only slightly drooping.

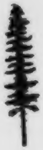
BRANCHES - mostly drooping.

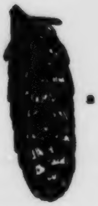
LEAVES - covered equally by stomata on upper and lower surfaces; needles covering branches on all sides.

CONES - female cones cylindrical, 3-6 cm in length (a).

HABITAT - subalpine, in areas of high snow cover.







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NOTE: The cones of *Tsuga heterophylla* are usually shorter than those of *Tsuga mertensiana*.

Acer glabrum var. douglasii
(Rocky Mountain maple)

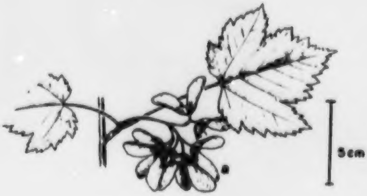
ACERACEAE

SHRUB - to small tree, 1-10 m tall, bark greyish to reddish.

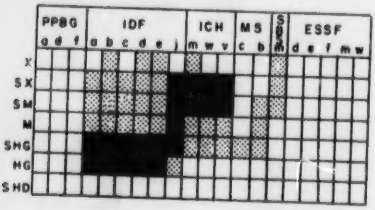
LEAVES - palmately 3-5 lobed, **typical "maple-leaf" shape**, coarsely twice-serrate, paler below.

FLOWERS - in axillary clusters, appearing with the leaves, greenish-yellow in colour, imperfect.

FRUIT - samaras not greatly divergent (a).



HABITAT



Alnus incana ssp. tenuifolia
(Thin-leaved mountain alder)

BETULACEAE

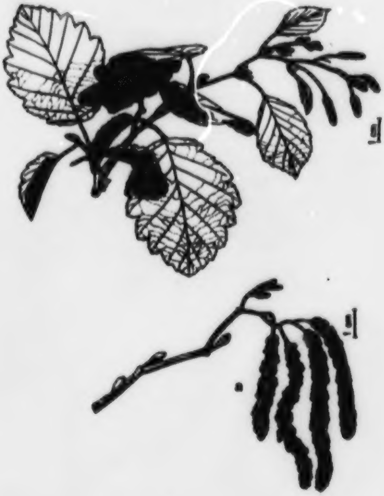
SHRUB - or small tree, up to 12 m tall.

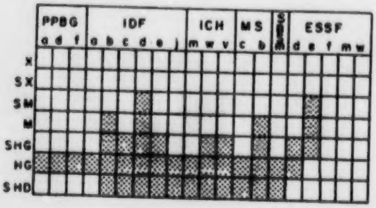
BRANCHES - twigs glabrous to woolly hairy.

LEAVES - broadly elliptic, rounded to somewhat heart-shaped at base, **rounded to blunt at tip**; shallowly lobed, doubly toothed; upper surface green, lower surface pale, usually abundantly hairy at least along veins; petioles hairy; young leaves not sticky; buds short stalked and club-shaped.

CATKINS - produced on growth of previous season, flowering in spring (a).

HABITAT - mostly along streams or at edge of ponds or lakes.





Alnus viridis ssp. *sinuata*
(Sitka mountain alder)

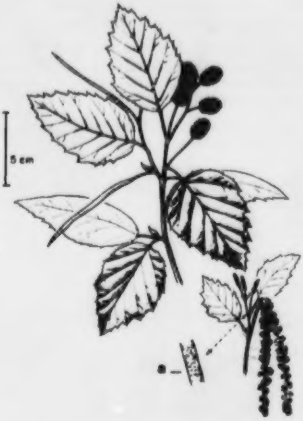
BETULACEAE

SHRUB - sweet-scented, 2-4 m tall.

BRANCHES - young twigs copiously glandular (a) otherwise glabrous, reddish-brown.

LEAVES - egg-shaped to elliptic, **sharp-pointed at tip**; finely double toothed, often shallowly lobed, leaves yellowish-green on both sides, usually shiny and smooth above, hairy in vein axils below, petioles usually glabrous; young leaves sticky beneath, buds sessile and pointed.

CATKINS - arising from buds of the current season.



HABITAT

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SHD																				

Amelanchier alnifolia
(Serviceberry, Saskatoon)

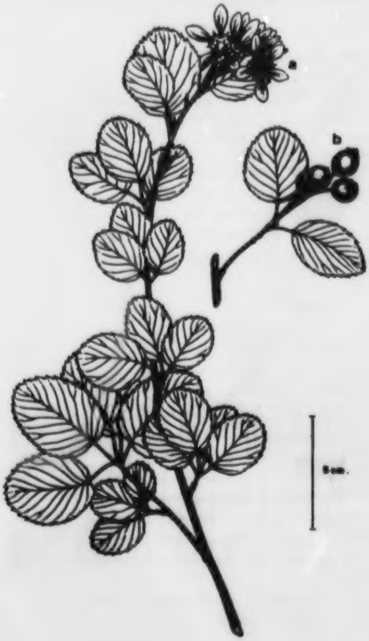
ROSACEAE

SHRUB - to small tree, to 7 m tall; stem smooth, with dark grey to reddish bark.

LEAVES - round with margins serrated most of the way around.

FLOWERS - white, abundant, in a short leafy cluster (a), usually 3-20; highly visible in the spring.

FRUIT - (b) berry-like, **purple to nearly black** with a white bloom; edible raw, cooked or dried, **sweet**.



HABITAT

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SHD																				

NOTE: Young plants are easily confused with *Spiraea betulifolia* differing primarily in pattern of leaf serrations.

Arctostaphylos uva-ursi
(Kinnikinnick, Bearberry)

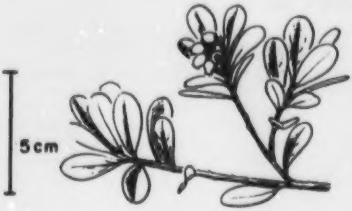
ERICACEAE

SHRUB - evergreen trailing, often forming mats with long flexible rooting branches.

LEAVES - oval to spatula shaped, leathery, entire, dark green, somewhat shiny above, paler beneath, to 2.4 cm long; used as a tobacco substitute in past.

FLOWERS - in a dense terminal cluster, urn-shaped (a), white or tinged with pink.

FRUIT - bright red berry resembling miniature apple with mealy and rather tasteless pulp; edible.



HABITAT

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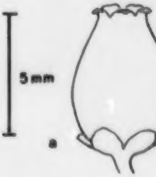


NOTE: Regarding C layer designation see Appendix II.

Artemisia frigida (Prairie sagebrush)

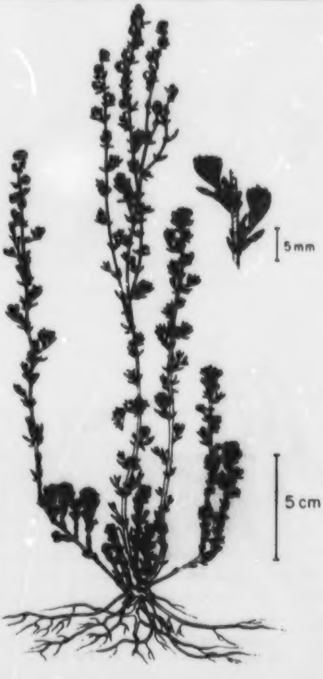
ASTERACEAE

SHRUB - perennial, 1-4 dm tall with stout stem base, woody crown.

LEAVES - clustered at base and well distributed along stem, soft and finely hairy, divided into 2 or 3 thin fringe-like leaflets, silvery, olive-grey coloured, with "sage" smell when crushed.

FLOWERS - small, dull, inconspicuous, yellow, and clustered along the flowering twigs; flowers in late summer.

HABITAT - prefers open sites.



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SHG																				
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NOTE: Increases in abundance with disturbance.

Artemisia tridentata
(Big basin sagebrush, Big sage)

ASTERACEAE

SHRUB - gnarled grey-green, up to 2 m tall; most common and conspicuous *Artemisia* at lower elevations.

LEAVES - are thin and triple or double notched (a), persist through winter, have characteristic "sage" smell.

FLOWERS - drab, yellow in a loose panicle, appear in late summer.

HABITAT

	PPBG			IDF						ICH			MS		SWB	ESSF				
	a	d	f	a	b	c	d	e	j	m	w	v	c	b	m	d	e	f	m	w
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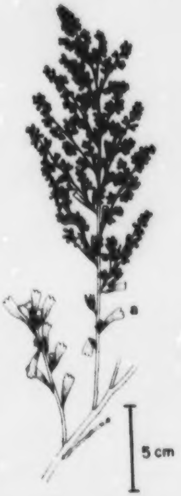
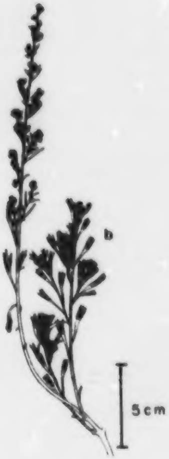
NOTE: *Artemisia tripartita* is a smaller shrub with more deeply notched leaves (b), found in the Southern Okanagan.



A. tridentata



A. tripartita

Betula glandulosa
(Bog birch, Bog glandular birch,
Scrub glandular birch)

BETULACEAE

SHRUB - low and spreading to erect, mostly 1-2 m tall.

BRANCHES - **abundantly resinous** with wart-like crystalline glands (a).

LEAVES - nearly circular; round-toothed, commonly 10 teeth per side or less; somewhat thick and leathery, **glandular on both surfaces**, bright green usually without hairs above, paler and often hairy below.

CATKINS - (b) **flowering with the appearance of leaves in the spring.**

FRUIT - nutlet with wings obscure to barely half as broad as nutlet.

HABITAT

	PPBG			IDF						ICH			MS		SWB	ESSF				
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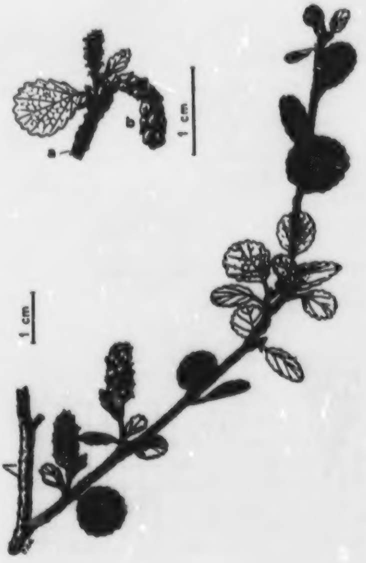


Cassiope mertensiana (Merten's mountain heather, Merten's cassiope)

ERICACEAE

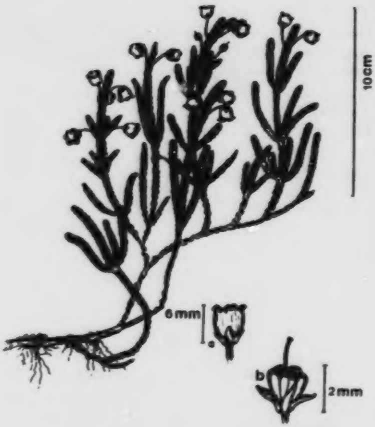
SHRUB - dwarf plant, 5-30 cm tall, forming widespread mat; stems, 5-30 cm tall, nearly completely hidden by leaves.

LEAVES - opposite, scale-like distinctly 4-ranked, pressed flat against stem, sessile, egg-shaped to lance-shaped, rounded on back, grooved only at extreme base.

FLOWERS - usually several near branch tips, bell-shaped (a); petals white; sepals reddish.

FRUIT - (b) capsule.

HABITAT - alpine meadows and open forests in upper subalpine zones.



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NOTE: *Cassiope tetragona* has larger leaves which are grooved on the lower surfaces.
*See Appendix II.

Ceanothus sanguineus (Redstem ceanothus)

RHAMNACEAE

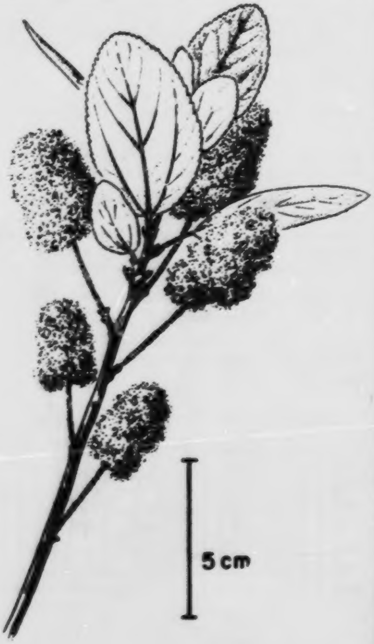
SHRUB - bushy, somewhat purplish, with erect stems, 1-3 m tall; the stems are reddish coloured in spring.

LEAVES - alternate, deciduous, with slender petioles, 1-2 cm long; the leaves are oval, 3-10 cm long with 3 main parallel veins, hairy (at least on the lower veins), finely toothed and glandular.

FLOWERS - small, white, in clusters near the twig ends.

FRUIT - Capsules about 4mm long, 3 lobed, hard.

HABITAT - Semi-shaded well drained soils along edge of road clearings, forest openings and rock slides.



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SHD																				

'eanothus velutinus (Snow bush ceanothus)

HAMNACEAE

HRUB - spreading, evergreen, heavy cented, to 2 m tall.

EAVES - alternate, shiny, often bronze inged, gummy upper surface and greyish elvety below, 3 main veins, finely toothed a), often curled under in hot weather, hick leathery.

LOWERS - white, in pyramid shaped clusters.

RUIT - capsules 4-5 mm long, 3-lobed.

ABITAT - semi-barren, gravelly flats or lopes receiving lots of sunshine.

	PPBG			IDF						ICH			MS		SBS	ESSF				
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SX			▨	▨	▨	▨	▨	▨	▨											
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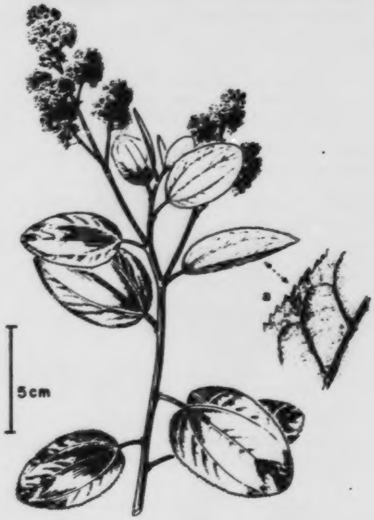

'hrysothamnus nauseosus
(Common rabbitbush)

STERACEAE

HRUB - compact, about 6 dm in height with tems finely hairy (a) and erect, typically, ight grey-green colour.

EAVES - 2-7 cm long, thin, velvety, not otched at tip.

LOWERS - (b) disc-like, yellow, in lusters in late summer.

RUIT - hairy achene (c).

ABITAT - common in dry interior on ry plains and hills.

	PPBG			IDF						ICH			MS		SBS	ESSF				
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SX	■	■	▨	▨	▨															
SM	■	■	■	▨																
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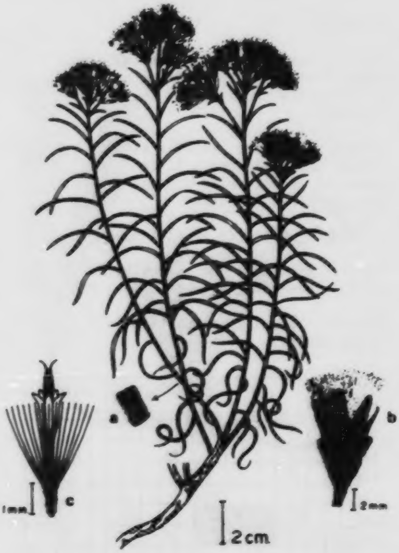
OTE: *Tetradymia canescens* is similar, except leaves are 1/2 as long and there are lumps on the twigs where leaves join.



Clematis occidentalis ssp. *grosseserata*
(Western blue clematis)

RANUNCULACEAE

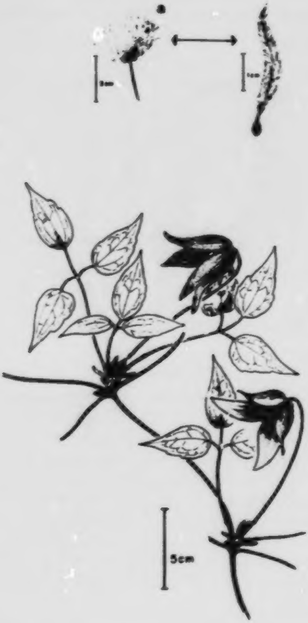
SHRUB - slender, climbing plant with shoots branching from main stem very symmetrically, with some shoots being tendrils.

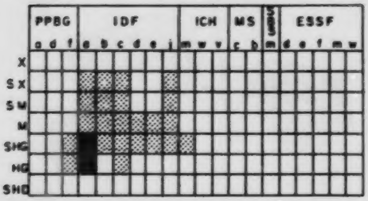
LEAVES - leaflets in three's with rounded teeth to toothless or trilobed.

FLOWERS - large, blue, showy, bell-shaped with yellow centre.

FRUIT - white, fluffy seeds (resembling a dust mop) (a).

HABITAT - on shady mountain slopes or valley bottoms.





	PPBG a	PPBG d	PPBG f	IDF a	IDF b	IDF c	IDF d	IDF e	IDF j	ICH m	ICH w	ICH v	MS c	MS b	[illegible] m	ESSF d	ESSF e	ESSF f	ESSF m	ESSF w
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SHG			▨	■	▨	▨	▨	▨	▨	▨										
HG			▨	■		▨														
SHD																				

NOTE: *Clematis ligusticifolia* is similar but has small white flowers; it is restricted to the PPBG zone.

Cornus sericea (Common red-osier dogwood)

CORNACEAE

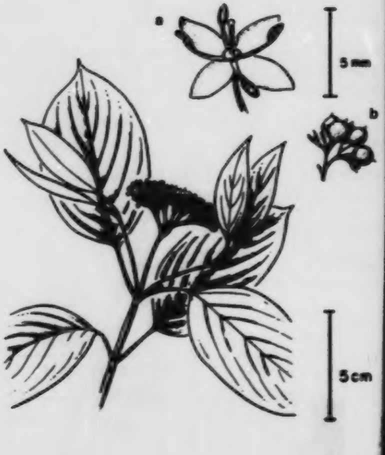
SHRUB - many stemmed, 2-6 m tall, usually freely spreading by layering of reclining or prostrate stems; stems usually bright reddish.

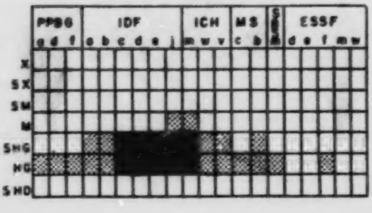
LEAVES - opposite, heavily veined, oval, mostly sharp-pointed 4-12 cm long, greenish above, paler and hairy beneath, turn deep red in autumn.

FLOWERS - white (a) in flat topped cluster.

FRUIT - white (b) (occasionally bluish) with a somewhat flattened stone; not edible.

HABITAT - usually in moist soils especially along streams.





	PPBG a	PPBG d	PPBG f	IDF a	IDF b	IDF c	IDF d	IDF e	IDF j	ICH m	ICH w	ICH v	MS c	MS b	[illegible] m	ESSF d	ESSF e	ESSF f	ESSF m	ESSF w
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SHD																				

Corylus cornuta
(Beaked hazelnut, Beaked filbert)

BETULACEAE

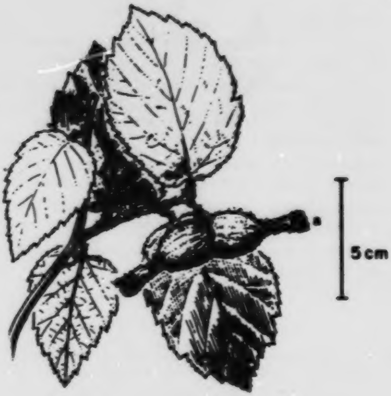
SHRUB - up to 4 m high, **twigs, leaves, and bud scales covered in long white hairs;** the bark does not have white lenticels as does *B. papyrifera.*

BRANCHES - twigs sparsely long haired, glabrous after first season.

LEAVES - elliptic to egg-shaped, commonly heart-shaped at base, sharp-pointed at tip; margin double toothed; lower surface paler than upper surface.

CATKINS - flowering before developing leaves in spring.

FRUIT - spherical nut enclosed in flask-like involucre which elongates into beak with irregularly jagged toothed tip (a).



HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
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NOTE: Fruit usually ripens in August and September, nuts are edible.

Empetrum nigrum (Black crowberry)

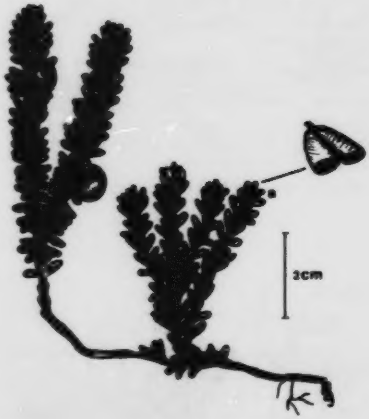
EMPETRACEAE

SHRUB - heath-like, low spreading, to 15 cm tall; branches with long woolly hairs.

LEAVES - somewhat rounded in cross section, needle-like (a), alternate and in whorls of 4, **hairy with margins rolled under.**

FLOWERS - inconspicuous, purplish.

FRUIT - round, purplish or black berries borne singly along the stem or in clusters of 2-5; edible, juicy with large hard seeds; makes fine jellies and jams.



HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
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SX																	▨			
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NOTE: Similar to *Phyllodoce empetriformis* which has more elongate, thinner, appressed leaves. See Appendix II.

Gaultheria hispidula (Creeping-snowberry)

ERICACEAE

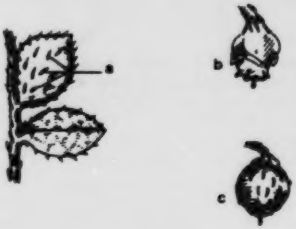
SHRUB - slender stemmed, creeping, matted delicate, evergreen, with brownish hairs.

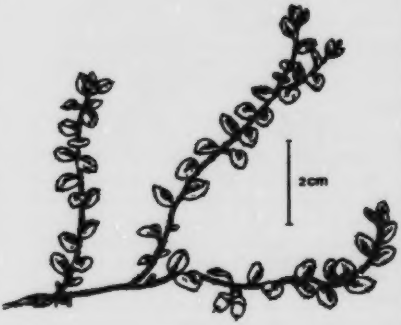
LEAVES - alternate, elliptic, acute, 4-10 mm long with edges rolled under, entire, leathery with brown appressed scale-like hairs beneath (a), evergreen.

FLOWERS - (b) mostly solitary in axils of leaves, on short stem, bell-shaped, pinkish

FRUIT - white, berry-like with hairs (c); juicy with a mild wintergreen flavour.

HABITAT - found on bogs, *Sphagnum* hummocks and on decaying wood.





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NOTE: Regarding C layer designation see Appendix II.

Gaultheria ovatifolia (Oregon-wintergreen)

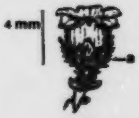
ERICACEAE

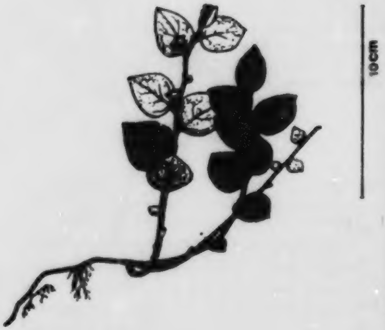
SHRUB - low evergreen, spreading with stems trailing on the ground and branches ascending; branches are covered with long brownish hairs.

LEAVES - alternate, ovate, acute, 2-4 cm long with thickened margins and distinctly toothed, evergreen.

FLOWERS - single in leaf axils on short peduncles; bell-shaped, white or pinkish; calyx (a) is very hairy.

FRUIT - red, berry-like, spicy flavoured.





HABITAT

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NOTE: *Gaultheria humifusa* is very similar but the calyx (a) is not hairy.

Holodiscus discolor (Creambrush, Oceanspray)

ROSACEAE

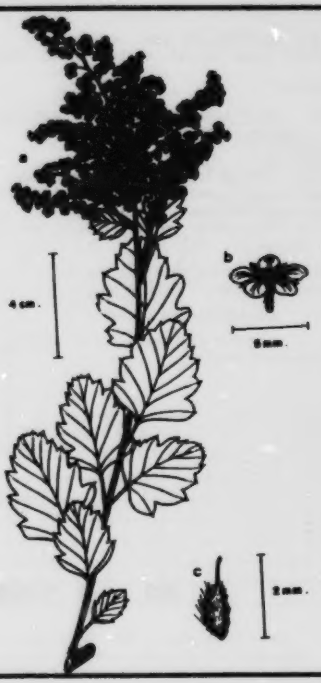
SHRUB - erect, slender to 4 m high, with arching branches, brownish peeling bark; young twigs are silky.

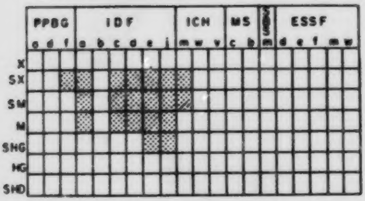
LEAVES - mostly 4-7 cm long, broadly ovate to oval, shallowly lobed or double-toothed, smooth above, woolly below, with petioles.

FLOWERS - a panicle-like inflorescence (a), flowers white to creamy (b).

FRUIT - hairy achene about 2 mm long (c).

HABITAT - open gravelly to rocky soil, dry to moist woods.


a
4 cm.
b
5 mm.
c
2 mm.



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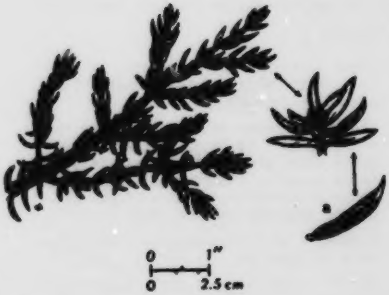
Juniperus communis (Common juniper)

CUPRESSACEAE

SHRUB - prostrate, trailing-branched to rounded, up to 1.5 (3) m tall.

LEAVES - mostly in 3's, needle-like to narrowly lance-shaped (a), usually stiff, very sharp pointed, whitish above, dark green below.

FRUIT - female cones berry-like (b), bluish-black, very fleshy, maturing second season; has a gin odour.



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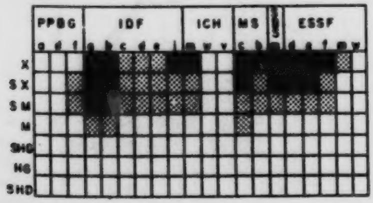

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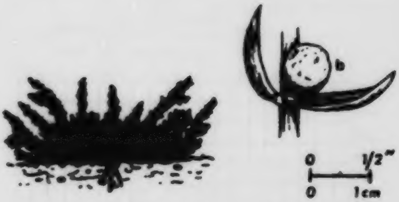


Kalmia microphylla* ssp. *occidentalis
(Western swamp laurel, Western swamp Kalmia)

ERICACEAE

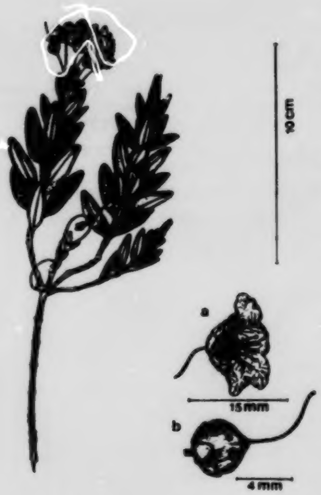
SHRUB - small evergreen, slender branched, spreading by layering, often matted to 5 dm tall.

LEAVES - narrow lance-shaped, dark green above, **conspicuously whitish waxy beneath, margins rolled under**, opposite, mostly 2-4 cm long, leaves pointed upward, not bent downwards.

FLOWERS - (a) deep pinkish-rose in terminal cluster, 1-2 cm broad.

FRUIT - (b) a 5-valved capsule.

HABITAT - peat bogs, peaty soils, muskeg, and mountain meadows.



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NOTE: *Kalmia microphylla* ssp. *microphylla* has smaller stature, smaller leaves and is found at higher elevations.

Ledum glandulosum
(Glandular-leaved labrador tea)

ERICACEAE

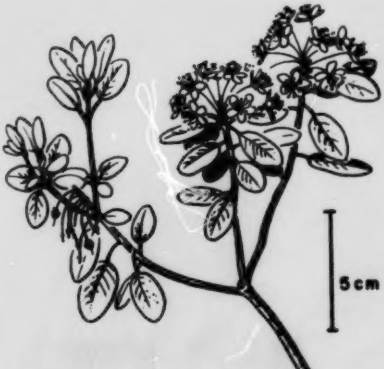
SHRUB - stout erect evergreen, to 1.5 m tall, with twigs minutely pubescent and glandular dotted.

LEAVES - grouped to give a whorled effect, elliptic to 5 cm long, leathery, deep green above often with greyish felt-like hairs beneath, **(lacks reddish wool beneath)**, densely glandular; margins often rolled under; **fragrant when crushed.**

FLOWERS - white in roundish clusters at ends of branches.

FRUIT - slightly hairy, glandular, ovate capsule.

HABITAT - found on moderately wet to dry, nutrient poor sites.



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NOTE: Can be confused with *Rhododendron albiflorum.*

Ledum groenlandicum (Common Labrador tea)

ERICACEAE

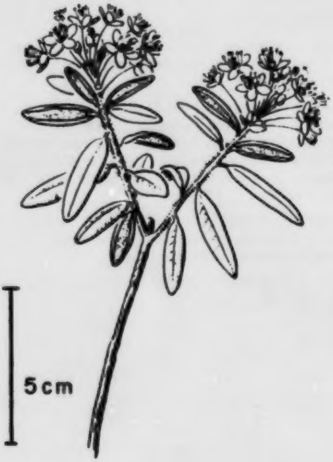
SHRUB - evergreen, to 1 m tall **with dense rusty hairs on twigs.**

LEAVES - alternate, narrow, elliptic to 6 cm long, leathery, deep green above, **with dense rusty hairs beneath**; margins rolled under; often drooping downwards.

FLOWERS - white, in terminal cluster from large scaly buds.

FRUIT - a hairy, narrow, oval capsule.

HABITAT - in muskegs, swamps, bogs, and moist coniferous woods; indicator of wet, usually very acid and poor organic soils.



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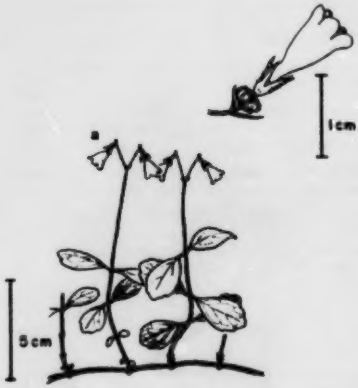
Linnaea borealis (Northern twinflower)

CAPRIFOLIACEAE

SHRUB - trailing, woody perennial with short, erect leafy stems, less than 10 cm long; more or less hairy.

LEAVES - opposite, firm, broadly elliptic, with shallow teeth.

FLOWERS - paired (a), pink bell-shaped flowers.



HABITAT

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NOTE: Regarding C layer designation see Appendix II.

Lonicera ciliosa
(Western trumpet honeysuckle)

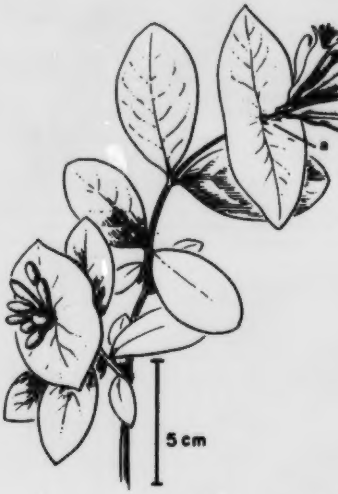
CAPRIFOLIACEAE

SHRUB - twining vine, sometimes climbing to 6 m; twigs hollow with whitish bloom when young.

LEAVES - opposite, oval-shaped, 4-10 cm long, 2-5 cm wide, with ciliate margins and whitish bloom beneath; the uppermost pairs are joined at the base thus the twig appears to pass through the middle of the leaf (a).

FLOWERS - dense, short terminal inflorescence, orange-yellow to orange-red, trumpet-shaped flowers.

FRUIT - red berries nearly 1 cm thick; not edible.



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Lonicera involucrata
(Black twin-berry, Twinberry honeysuckle)

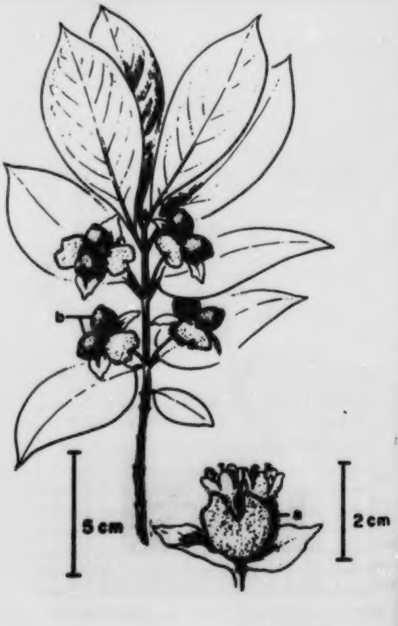
CAPRIFOLIACEAE

SHRUB - 0.5 to 5 m tall; young twigs four angled.

LEAVES - opposite, somewhat elliptic, pointed, 5-14 cm long, 2-8 cm wide, often hairy beneath.

FLOWERS - axillary, paired, yellow tubular flower with a pair of purplish bracts (a).

FRUIT - several-seeded, black, "twin" berries (b) not considered palatable: some Indian groups claimed that eating the berries would make one crazy.



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Lonicera utahensis (Utah honeysuckle)

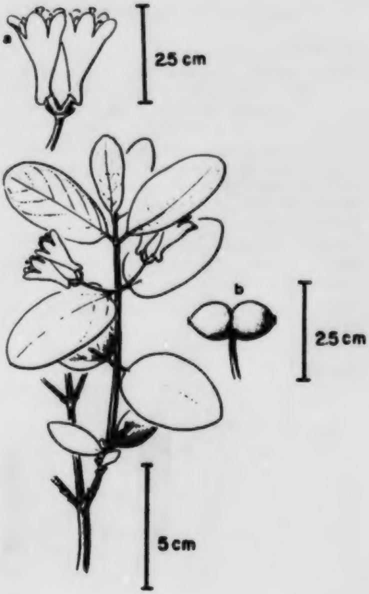
CAPRIFOLIACEAE

SHRUB - straggly, from 0.5-2 m high with dull greyish bark.

LEAVES - opposite, elliptic to ovate, 2-8 cm long, 1-4 cm broad, smooth above, smooth or hairy below.

FLOWERS - borne in leaf axils, light yellow, trumpet-shaped (a).

FRUIT - berries about 1 cm thick, bright red jelly-like, joined at base (b); edible.



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Mahonia aquifolium (Tall Oregon-grape)

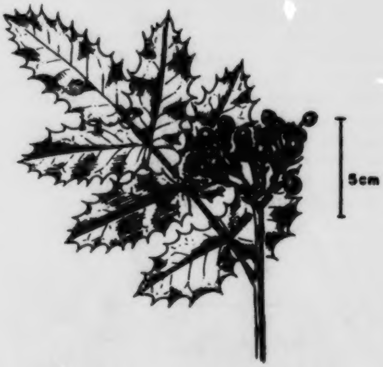
BERBERIDACEAE

SHRUB - stoloniferous to erect and stiff branched, holly-like.

LEAVES - have 5-9 leaflets, each twice as long as broad, glossy upper surface, shiny to dull lower surface, one main vein, pinnately nerved, prominant spine tipped teeth.

FLOWERS - bright yellow in clusters.

FRUIT - blue berries with whitish waxy covering; can be eaten cooked or as a beverage.



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NOTE: *M. nervosa* has 9-19 leaflets dull on both sides; *M. repens* has 5-7 leaflets each less than twice as long as broad.

Menziesia ferruginea
(False azalea, Rusty Pacific menziesia)

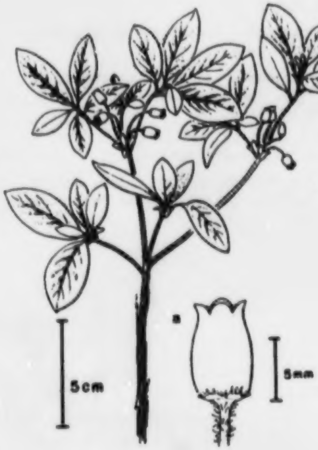
ERICACEAE

SHRUB - erect to spreading, to 2 m tall, deciduous, with scaly bark, on older branches; young twigs covered with fine hairs, somewhat glandular.

LEAVES - **dull,thin**, oblong to elliptic, **light green to blue-green**, hairy-glandular, serrated margin, opposite but appearing like whorls on ends of branches; skunky smell when crushed.

FLOWERS - in terminal clusters on last year's growth, urn-shaped (a),small yellowish, tinged with red.

FRUIT - persistent oval capsule with thin wall.



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Oplopanax horridus (Devil's club)

ARALIACEAE

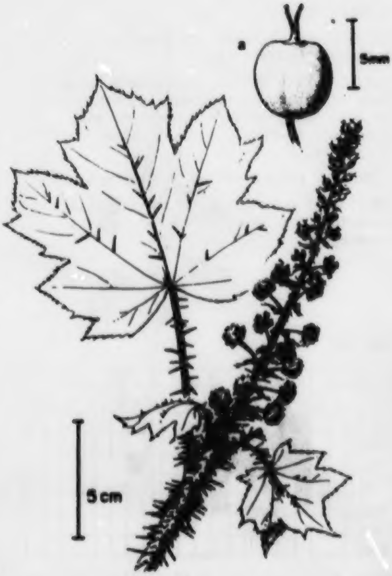
SHRUB - deciduous, 1-3 m tall, with thick stems **armed** with numerous yellowish spines.

LEAVES - shallowly, palmately 7-9 lobed, broad, twice serrated, "maple-leaf"-like, with numerous spines present on underside.

FLOWERS - in an elongated cluster to 25 cm long composed of several smaller clusters.

FRUIT - **considerably flattened bright red berries (a); little is known about their edibility, not recommended.**

HABITAT - in moist woods, especially in seepage sites and along streams.



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SHD																				

Paxistima myrsinites
(Oregon boxwood, Falsebox)

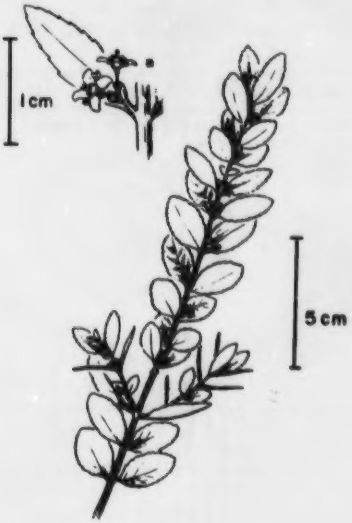
CELASTRACEAE

SHRUB - erect to prostrate, evergreen to 6 dm tall with brown 4-ridged branches.

LEAVES - **opposite** or nearly so, oval to elliptic, 1-3 cm long, **leathery** and serrated.

FLOWERS - numerous, small reddish, in axillary clusters (a), 4-merous.

FRUIT - a small oval 1-2 seeded capsule.



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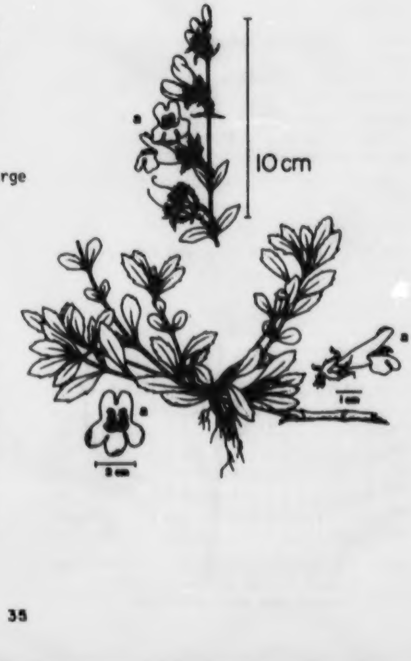
Penstemon fruticosus (Shrubby penstemon)

SCROPHULARIACEAE

SHRUB - spreading or erect, bushy-branched, 1-4 dm tall, evident spring roadside plant.

LEAVES - larger leaves crowded toward base of season's growth on short sterile shoots, toothed or not toothed, blade up to 6 cm long and 1.5 cm wide, leaves on flowering shoots are reduced and less crowded, opposite.

FLOWERS - (a) on short bracteate raceme, large purplish, trumpet-shaped with hairy lower lip.



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Philadelphus lewisii
(Lewis' mock-orange, Syringa)

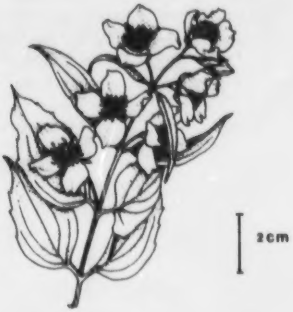
HYDRANGEACEAE

SHRUB - rounded to erect straggling, 1-3 m tall.

LEAVES - opposite, ovate, with a few points or teeth on each side of the leaf, stiff hairs on both surfaces or sometimes smooth above or below except on nerves, 3 main veins, light green.

FLOWERS - fragrant, 3-11 in terminal racemes, white.

FRUIT - a capsule.



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Phyllodoce empetriformis
(Red mountain heather)

ERICACEAE

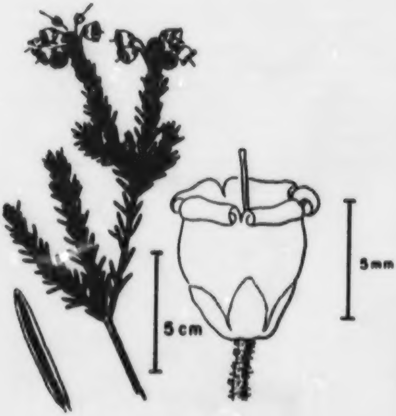
SHRUB - evergreen, much-branched, matted plant 1-4 dm tall; young stems glandular hairy becoming glabrous with age. (*See Appendix II).

LEAVES - needle-like, linear, glabrous except for minutely glandular margins; groove present on lower surface.

FLOWERS - (a) bell-shaped, petals pink to deep rose.

FRUIT - capsule.

HABITAT - alpine meadows and subalpine zones.



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NOTE: *Phyllodoce glanduliflora* is similar except it has yellow urn-shaped flowers and more glandular leaves.

Physocarpus malvaceus (Mallow ninebark)

ROSACEAE

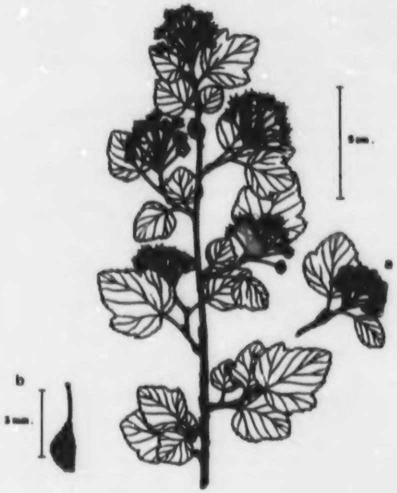
SHRUB - spreading to erect 0.5-2 m tall with angled branches and peeling grey bark.

LEAVES - alternate, palmate lobed, ("maple-leaf-like") doubly toothed, dark green, sparsely hairy above, paler with copious star-like hairs beneath.

FLOWERS - small, white, in a round densely flowered clump (a); the pedicels and calyx lobes being densely covered with star-like hairs.

FRUIT - cluster of brown seed husks (b), covered with dense greyish star-like hairs.

HABITAT - dry situations and rocky hillsides, most common in the Columbia valley, east of Christina Lake and in drier regions around Kootenay Lake, Elko and Fruitvale.



Prunus emarginata (Bitter cherry)

ROSACEAE

SHRUB - to erect tree, 2-15 m tall.

LEAVES - (a) elliptic, oblong, egg-shaped or broadest above middle and tapering to base, rounded to blunt at tip, triangular or acute at base, round-toothed to serrulate.

FLOWERS - flat-topped inflorescence of usually 5-8 white flowers (b).

FRUIT - (c) a drupe, red to almost black, very bitter.

HABITAT

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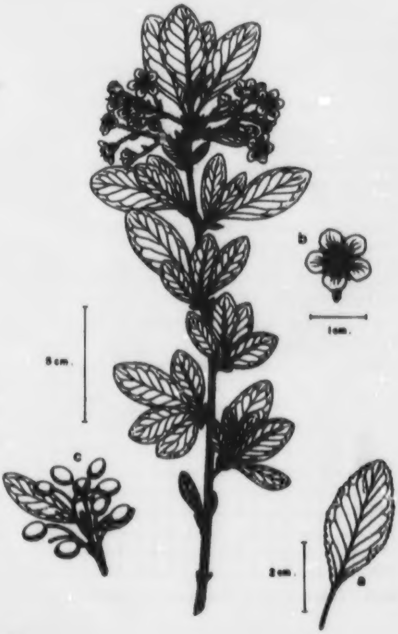

Prunus virginiana (Black choke cherry)

ROSACEAE

SHRUB - (sometimes a tree), up to 6 m.

LEAVES - thin, elliptic to oblong or egg-shaped, sharp pointed at tip, blunt at base; **finely and sharply toothed**; bright green and glabrous above, paler beneath, often with glands on petiole or lower part of leaf.

FLOWERS - (a) white and numerous in **elongated terminal inflorescence** (raceme).

FRUIT - (b) a drupe, red to purple or black egg-shaped, sweet but astringent; makes excellent jellies, edible fresh, dried or cooked.

HABITAT - edge of woods and thickets, often on dry and exposed sites.

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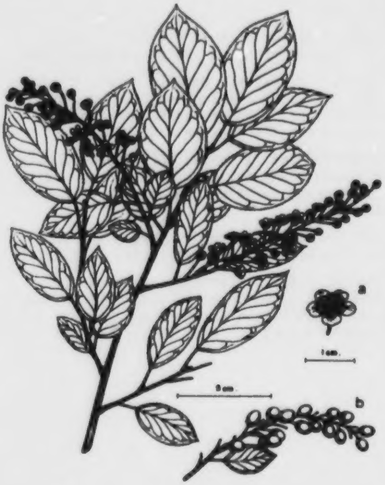

Purshia tridentata
(Antelopebush, Bitterbrush)

ROSACEAE

SHRUB - rigidly branched shrub, 1-3 m tall, with grey or brownish bark and twigs covered with woolly hairs.

LEAVES - wedge-shaped, 10-20 mm long, deeply 3-toothed at the tip; hairy to woolly and greenish on upper surface; greyish woolly beneath, margins usually rolled under.

FLOWERS - numerous small bright yellow flowers, single on short pedicels; sepals are one-half the length of the petals and are markedly glandular on the outer side, conspicuous in late spring.

FRUIT - spindle-shaped achene, 15 mm long, velvety and glandular (a).

HABITAT - extreme southern B.C.

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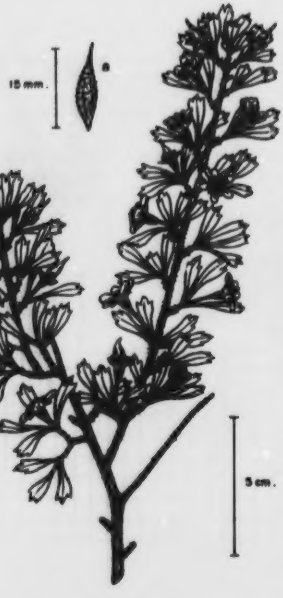
NOTE: Compare with *Artemisia tridentata.*



Rhododendron albiflorum
(White-flowered rhododendron)

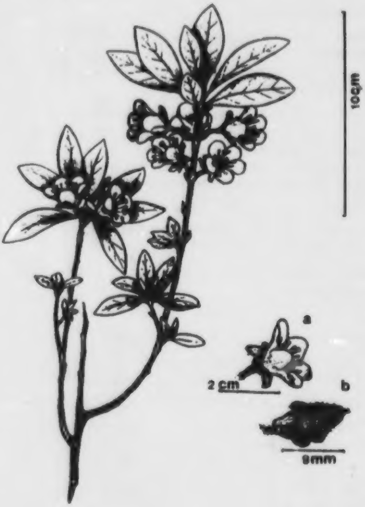
ERICACEAE

SHRUB - erect, slender branched, deciduous, 1-2 m high with peeling bark; young twigs are covered by coarse reddish hairs.

LEAVES - to 8 cm long, thin, elliptic, pointed at both ends, green upper surface, lighter beneath, **covered with loose reddish hairs**, not toothed, sometimes undulate, borne at end of branches.

FLOWERS - (a) white in axillary clusters of 1-4 along the stems.

FRUIT - short, heavy walled capsule (b).



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Rhus glabra (Smooth sumac)

ANACARDIACEAE

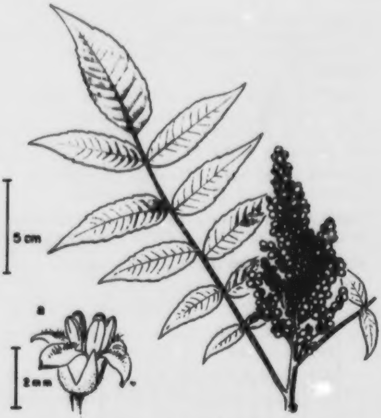
SHRUB - smooth barked, 1-3 m tall, sometimes forming large thickets.

LEAVES - 7-29 leaflets per leaf; leaflets are oblong-lanceolate to elliptic, toothed, 5-12 cm long; **turn bright red in autumn**.

FLOWERS - (a) yellowish in large dense panicles.

FRUIT - 4-5 mm long, flattened, thickly reddish hairy.

HABITAT - dry slopes at lower elevations, often along banks of water courses.



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Ribes cereum (Squaw currant)

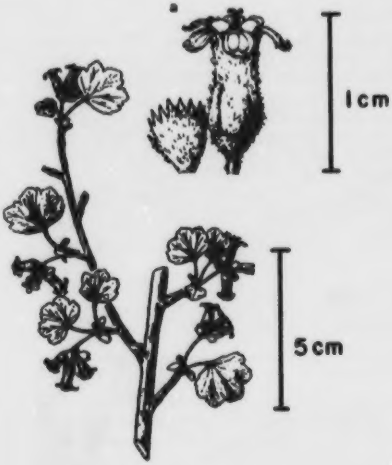
GROSSULARIACEAE

SHRUB - spreading or rounded to erect, **unarmed**, to 1.5 m tall with new branches finely hairy turning greyish brown or reddish brown.

LEAVES - 1.5-2.5 cm broad, from kidney-shaped to wedge or fan-shaped, smooth to coarsely toothed to shallowly 3 or 5 lobed, olive-green, small; smooth to downy, **often glandular on both surfaces**.

FLOWERS - (a) borne singly or in small clusters, finely hairy and sticky, greenish white to white or pinkish.

FRUIT - small, smooth red berry (currant), unpalatable.



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Ribes hudsonianum (Northern black currant)

GROSSULARIACEAE

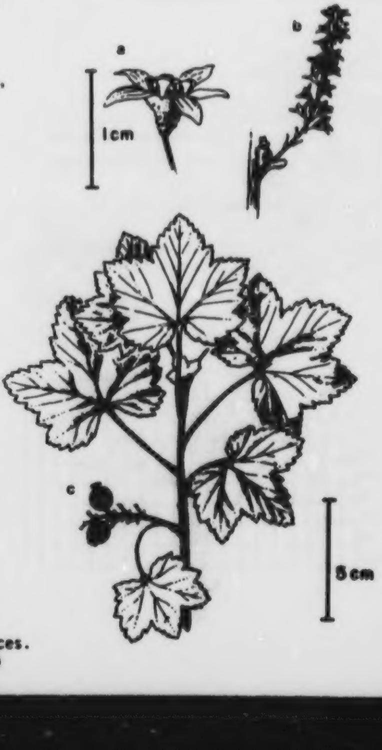
SHRUB - erect, **unarmed**, 0.5-1.5 m tall, with characteristic round, yellow,crystalline, shining glands and strong, sweetish, **unpleasant odour**.

LEAVES - 3.5-9 cm broad, somewhat "maple-leaf"-shaped, 3-5 lobed, glandular to very hairy (and pale) on the lower surface and sparsely hairy on the upper.

FLOWERS - (a) many flowered racemes (b) ascending up to 17 cm long, white.

FRUIT - smooth black berry (currant) (c), in clusters of 8-16, edible raw or cooked.

HABITAT - stream banks, moist woods.



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NOTE: *R. bracteosum* is found on wetter sites, has a stronger odour, larger leaves mostly without hairs on the lower surfaces.

Ribes lacustre
(Prickly gooseberry, Black swamp gooseberry)

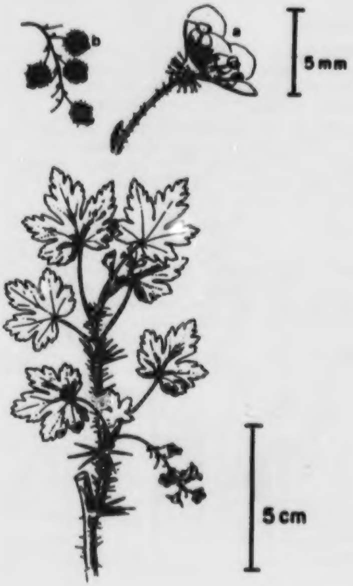
GROSSULARIACEAE

SHRUB - erect to spreading, **armed with numerous sharp prickles** and larger nodal spines, 1-1.5 m tall.

LEAVES - 2-5 cm broad, somewhat "maple-leaf"-shaped, mostly 5-lobed, 1-2 times coarsely serrated, heart-shaped base, not glandular.

FLOWERS - shallow saucer-shaped (a), in drooping cluster of 7-15 flowers, petals reddish.

FRUIT - dark purple berries with stalked glands (b), edible.



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Ribes viscosissimum (Sticky currant)

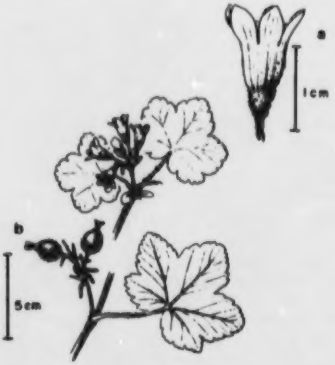
GROSSULARIACEAE

SHRUB - erect to spreading and usually straggly, **unarmed**, about 2 m tall; generally soft hairy and sticky; the stems have shreddy bark and are dark reddish-brown when old.

LEAVES - 3-6 cm broad, 3-5 rounded lobes, coarsely toothed, sticky and downy along the veins, very soft hairy on both surfaces.

FLOWERS - (a) in clusters of 3-8, greenish-white with pinkish tinge.

FRUIT - very few black berries (currants) (b), covered with short stiff hairs; with a dry and disagreeable taste and smell.



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Rosa acicularis (Prickly rose)

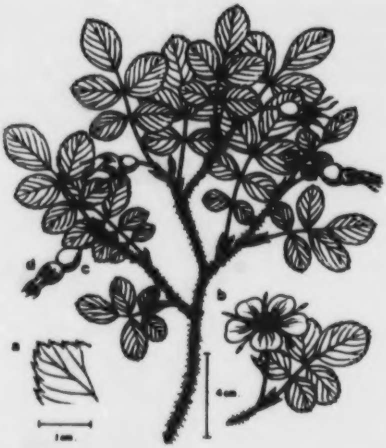
ROSACEAE

SHRUB - 0.5 - 1.5 m tall; with stems, usually densely covered with numerous straight, bristly prickles of various sizes, those of the nodes longer.

LEAVES - 5-7 leaflets, 1.5-4.5 cm long, 0.7-2.5 cm wide, elliptic, serrate to doubly serrate (a), upper surface green and smooth, lower pale, somewhat short pubescent and often glandular.

FLOWERS - (b) large, pink and borne singly or in pairs.

FRUIT - pear-shaped hips (c), purplish, 1-2 cm long, **sepals persistent on the hips** (d); can be used for tea and outer rinds can be eaten raw or cooked.



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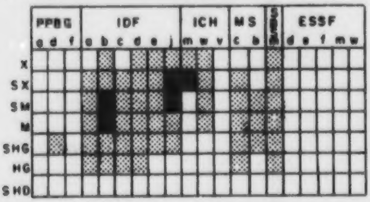

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Rosa gymnocarpa (Baldhip rose)

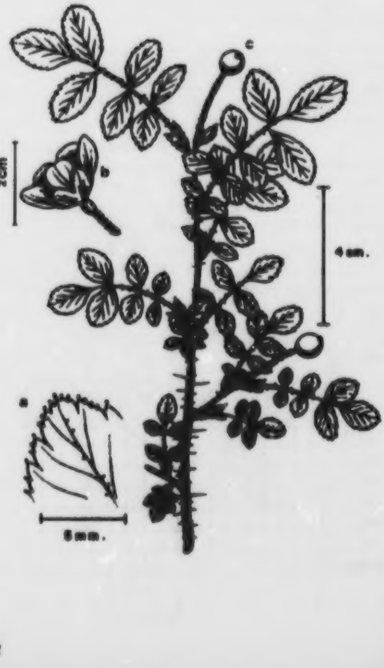
ROSACEAE

SHRUB - slender, erect to 2 m; with stems very bristly with very slender infrastipular prickles not obviously different from others, flowering shoot is sometimes unarmed.

LEAVES - 5-9 leaflets, 1-4 cm long, 0.5-3 cm wide, elliptic, doubly serrate with gland-tipped teeth (a), thin, paler and sometimes glandular on midrib beneath, otherwise smooth.

FLOWERS - (b) small, usually single at ends of branches.

FRUIT - hip bright red, ovate (c), 6 mm broad, **sepals deciduous** from maturing fruit; can be used for tea and outer rinds can be eaten raw or cooked.



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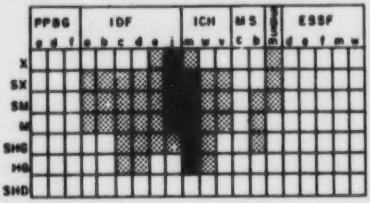

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Rosa nutkana (Nootka rose)

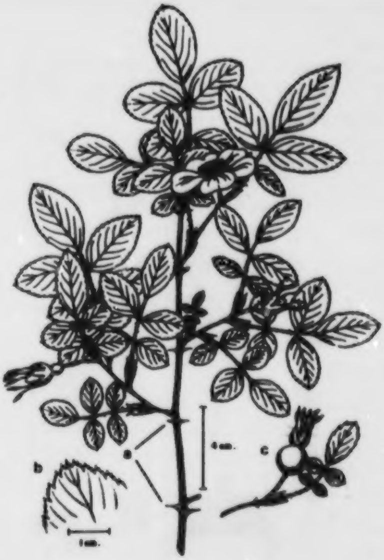
ROSACEAE

SHRUB - 2.5 m tall; with often stout, erect stems, **armed with a large pair of straight to curved, flattened, infrastipular thorns** (a).

LEAVES - 5-7 leaflets, 1-7 cm long, 0.7-4.5 cm wide, elliptic, serrate or doubly serrate (b), green above, paler beneath.

FLOWERS - solitary, occasionally 2-3, large, petals pinkish to rose.

FRUIT - **hips more or less spherical** (c), purplish-red. Rose hips provide a rich source of vitamin C, and can be used in jellies and tea.



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NOTE: *Rosa woodsii* is a similar species with smaller flowers mostly in a flat-topped inflorescence.

Rubus idaeus (American red raspberry)

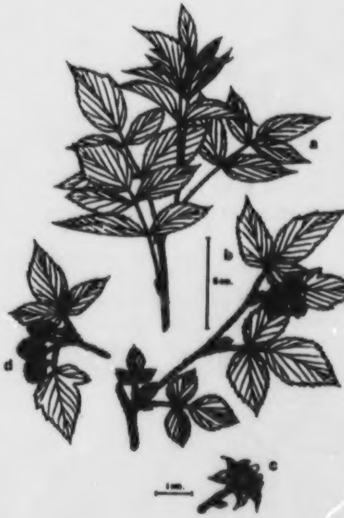
ROSACEAE

SHRUB - an erect perennial to 3 m tall; stems (canes) upright, almost unarmed to prickly bristly; shredding bark yellow to cinnamon-brown.

LEAVES - of first year canes with 3-7 leaflets (a), serrated and pointed; of flowering canes mostly 3-foliate (b).

FLOWERS - (c) drooping or in small grape-like clusters, petals white.

FRUIT - red raspberry (d), rarely yellow, falling intact from the dry receptacles; smaller than domestic variety but better flavour.



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NOTE: *R. spectabilis* is unarmed, has red flowers, 3-foliate leaves, and is more typically coastal.

Rubus parviflorus **(Western thimbleberry)**

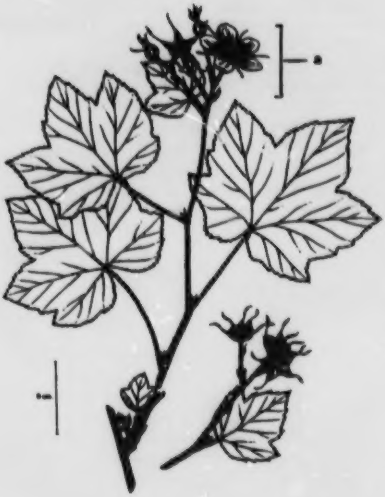
ROSACEAE

SHRUB - erect to 2.5 m tall, with shredding bark; young growth glandular-hairy; unarmed; with several stems. Young shoots and fruits can be eaten raw or cooked.

LEAVES - large, soft, "maple"-like, 3-7 lobed, serrated, with long petioles.

FLOWERS - large, 3-11 in a long peduncled (a) cluster, petals white.

FRUIT - red, hairy drupelets; edible.



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Salix bebbiana **(Bebb's willow)**

SALICACEAE

SHRUB - to small tree, up to 10 m tall.

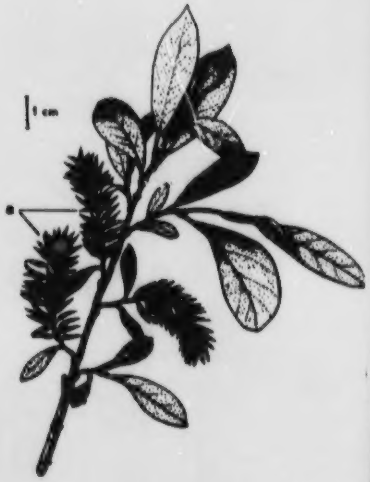
BRANCHES - young twigs thin to densely hairy.

LEAVES - usually entire, mostly elliptic to sometimes narrowly elliptic-egg-shaped, triangular at base, acute to obtuse tip; deep green and eventually smooth above, covered in fine silky hairs.

FLOWERS - catkins (a), appearing at same time as the leaves.

FRUIT - a capsule, 5-9 mm long, usually thinly short-hairy, on stipe 2-5 mm long.

HABITAT - upland forests; streambanks to drier sites.



Salix scouleriana (Scouler's willow)

SALICACEAE

SHRUB - or small tree 2-12 m tall.

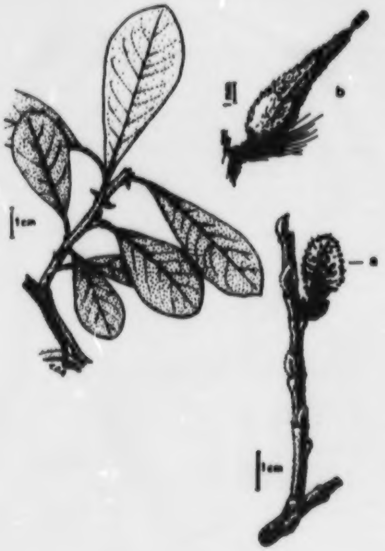
BRANCHES - twigs sparsely to densely grey-hairy.

LEAVES - entire, usually broadly egg-shaped to lance-shaped but broadest above the middle and tapering to the triangular-shaped base, tip usually rounded; dark green and without hairs above, covered underneath in fine waxy powder and sparse reddish straight hairs, pressed to the leaf's underside.

FLOWERS - catkins (a), appear before leaves.

FRUIT - a capsule (b), 5-8 mm long, short-hairy, on stipe to 1 mm long.

HABITAT - streambanks, along sloughs and ditches.



Sambucus racemosa
(Western American red elder)

CAPRIFOLIACEAE

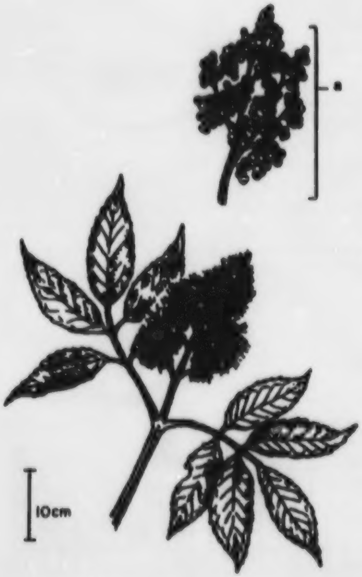
SHRUB - to small tree, mostly 2-6 m tall, with soft pithy twigs.

LEAVES - opposite, with petiole, mostly 5-7 leaflets; the leaflets lance-shaped pointed, sharply serrated, often somewhat hairy beneath.

FLOWERS - in a rounded or pyramidal cluster, white to creamy.

FRUIT - pyramidal clusters (a) of bright red berries.

HABITAT - especially on roadsides and in disturbed areas.



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NOTE: *Sambucus caerulea*, found in the Southern Okanagan, is more tree-like and has bluish-black berries.

Shepherdia canadensis
(Soapberry, Soopolallie)

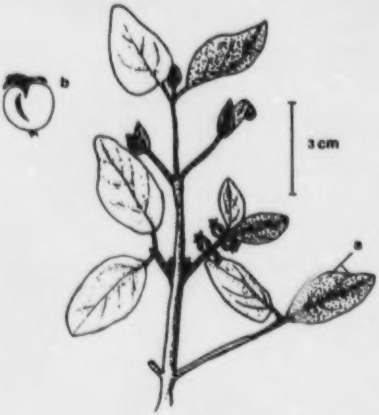
ELAEAGNACEAE

SHRUB - unarmed spreading, 1-4 m tall; branches brownish; young branches with rusty spots.

LEAVES - oval, opposite, dark greenish on upper surface, whitish silvery hairs and rusty brown spots on the under surface (a).

FLOWERS - 1-several small yellowish-brown in leaf axils; male and female flowers on separate plants.

FRUIT - (b) orange-red, fleshy, translucent berry; have a strong sour-bitter taste; used by several Indian groups to make "Indian ice-cream".



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Sorbus sitchensis (Sitka mountain-ash)

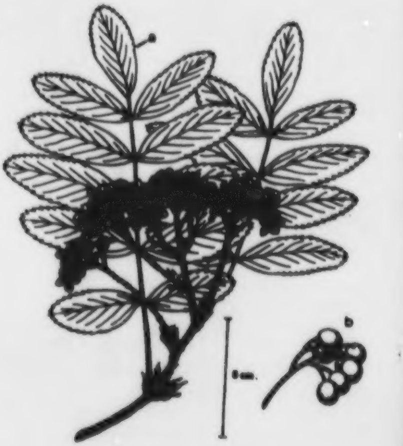
ROSACEAE

SHRUB - with several erect stems; to 4 m tall, winter buds and young growth with rusty hairs; can hybridize with *S. scopulina*, see note.

LEAVES - 7-11 leaflets, serrated for not more than 3/4 of their length (a), blunt and rounded at the top.

FLOWERS - white, in a rounded-top cluster of not more than 80 flowers.

FRUIT - (b) red, berry-like, with a whitish bloom; edible but extremely tart and bitter; much favoured by some birds.



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NOTE: *S. scopulina* is a similar species with sharp pointed, fully serrated leaves; flowers in flat-top clusters of up to 200.

Spiraea betulifolia (Birch-leaved spirea)

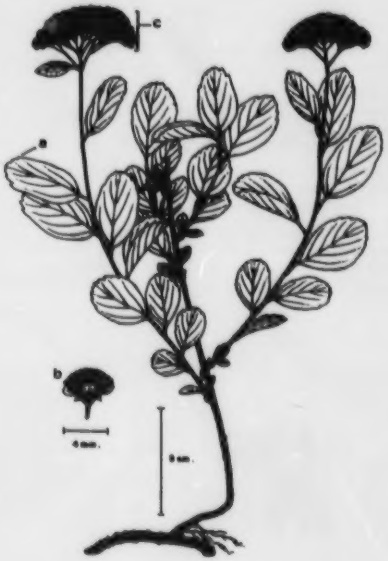
ROSACEAE

SHRUB - strongly rhizomatous, mostly 2.5 - 6 dm tall; **not hairy.**

LEAVES - egg-shaped-oblong or egg-shaped but wider toward the tip; usually coarsely, doubly toothed above the middle (a), dark green on upper surface, pale on lower surface.

FLOWERS - (b) in a **nearly flat-topped inflorescence** (c), **petals dull white**, often with pale pinkish or lavender tinge.

FRUIT - a follicle.



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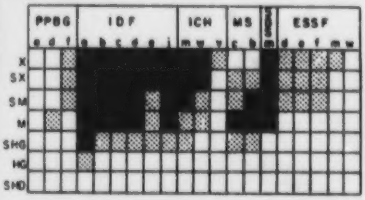

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NOTE: Can be easily confused with young *Amelanchier alnifolia* plants, primarily differing by leaf serrations.

Spiraea douglasii ssp. *menziesii* (Menzies' spirea, Hardhack)

ROSACEAE

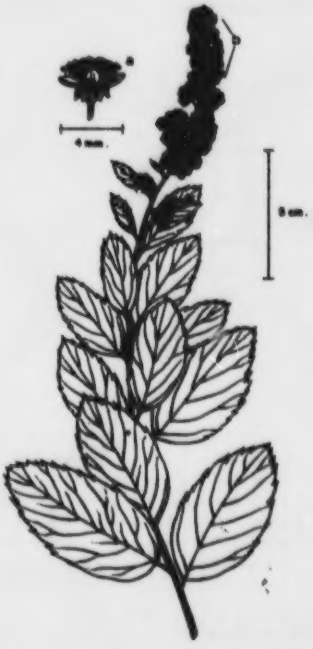
SHRUB - erect much-branched to 2 m tall, with young growth woolly.

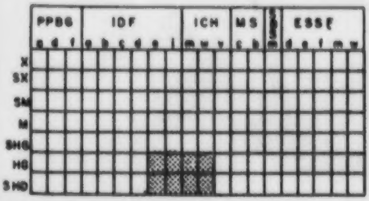
LEAVES - oblong to oval, serrated above the middle, with dense small white hairs on the underside.

FLOWERS - (a) in a **much elongated narrow and densely compacted cluster** (b); **petals pink to deep rose.**

FRUIT - a follicle.

HABITAT - wet places at edges of lakes and streams, in swamps and bog edges.





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Symphoricarpos albus
(Common snowberry, Waxberry)

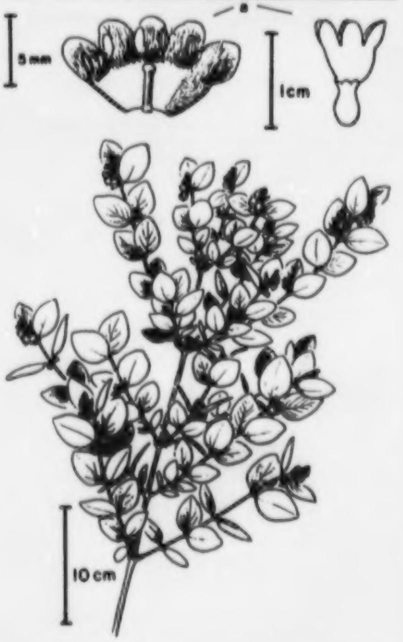
CAPRIFOLIACEAE

SHRUB - erect branching, 1-2 m tall; twigs very fine, with or without few hairs.

LEAVES - **opposite** elliptic to elliptic-ovate, entire or with a few coarse lobes; young leaves are highly variable sometimes resembling small oak leaves.

FLOWERS - (a) mostly terminal, pink to white short broad "bells", 5-7 mm long, in short dense clusters of few flowers.

FRUIT - **white, persistent through the winter, globose berry-like,** with 2 nutlets; considered poisonous by many; used medicinally by many Indian groups.



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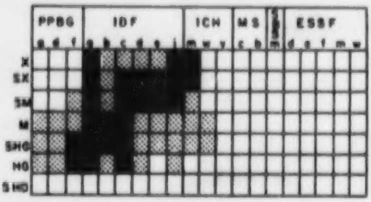

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Vaccinium caespitosum (Dwarf blueberry)

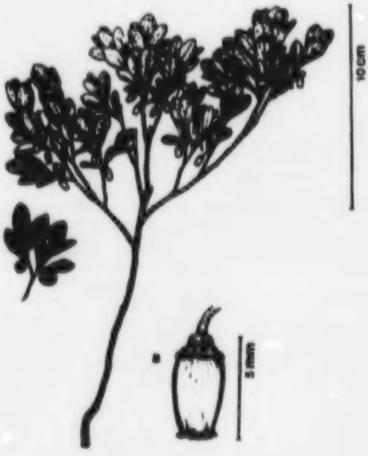
ERICACEAE

SHRUB - widely spreading, depressed or tufted, **dwarf shrub** to 30 cm tall; twigs yellowish-green to reddish, often hairy, somewhat angled.

LEAVES - **oblanceolate**, less than 3 cm long, pointed or blunt, serrated on upper half, bright green on both sides; network of veins pronounced beneath.

FLOWERS - (a) whitish to pink, narrow urn shape, single in axil of leaf.

FRUIT - berry, light blue to blackish-blue with a pale bloom; edible and sweet, raw or cooked.



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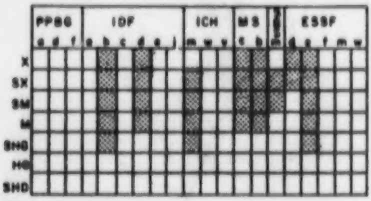

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NOTE: Regarding C layer designation
see Appendix II.

Vaccinium deliciosum (Cascade blueberry)

ERICACEAE

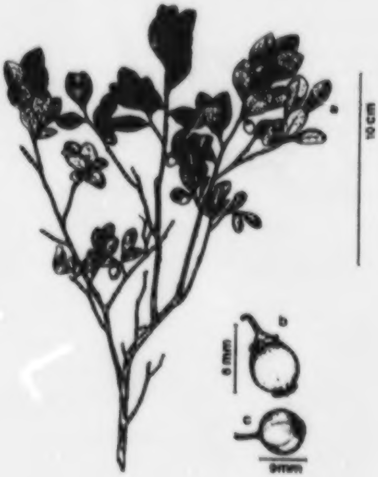
SHRUB - up to 4 dm tall, densely branched, often matted, **glabrous**, greenish-brown branches, inconspicuously angled.

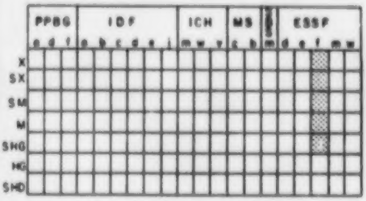
LEAVES - **obovate** (a), up to 3 cm long, sometimes toothed from tips to midlength or below, dull green above, pale green and not glandular beneath.

FLOWERS - (b) pinkish, somewhat urn-shaped, borne singly.

FRUIT - (c) berry (blueberry) whitish-blue, very palatable.

HABITAT - higher altitudes in subalpine forest along the coast, and coast-interior transition.





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Vaccinium membranaceum
(Big huckleberry, Huckleberry, Black blueberry)

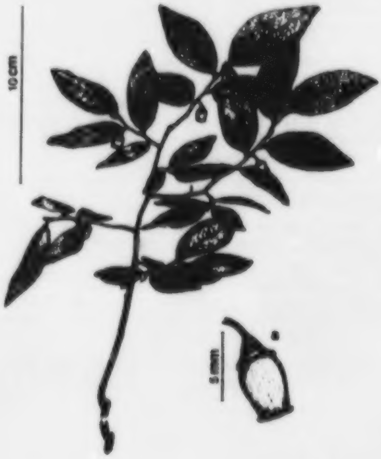
ERICACEAE

SHRUB - branched, **erect** 0.5 to 2 m tall; young branches, yellowish-green, somewhat angled; old branches with greyish shredding bark.

LEAVES - 2-5 cm long, pointed and distinctly serrated, paler on lower surface.

FLOWERS - (a) creamy-pink, urn-shaped, single in leaf axil, appear after leaves.

FRUIT - **purplish-black berry, without bloom**; edible and of good flavour.



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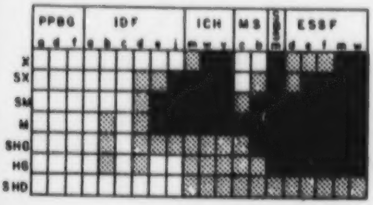

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Vaccinium myrtilloides
(Velvet-leaved blueberry)

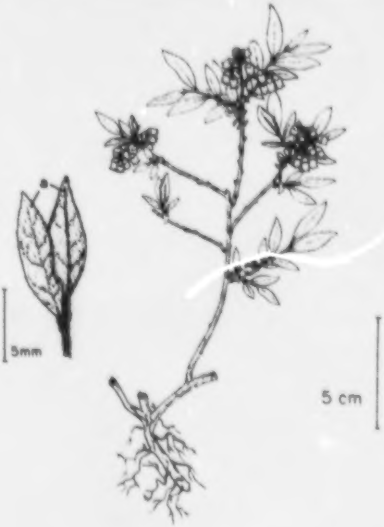
ERICACEAE

SHRUB - deciduous low shrub to 4 dm high, with cylindrical and **pubescent branches**, the young ones being very **dense velvety pubescent**.

LEAVES - elliptic to oblong-lanceolate, up to 4 cm long, entire, softly pubescent (a).

FLOWERS - greenish-white, or tinged with pink, broadly cylindric bell-shaped; in short clusters terminating the branchlets.

FRUIT - berry, blue with heavy bloom, edible and sweet.



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Vaccinium myrtillus (Low blueberry)

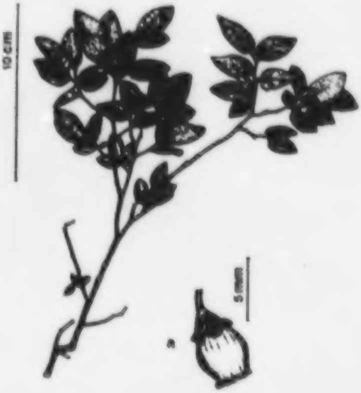
ERICACEAE

SHRUB - low, erect, slender, branched shrub to 30 cm with strongly angled greenish-brown branches (thicker and less numerous than *V. scoparium*), usually finely pubescent in the grooves.

LEAVES - ovate, 1-3 cm long, sharply toothed acute or rounded at apex, glabrous, light green, strongly veiny with prominent midrib on lower surfaces, **lower leaves smaller than upper leaves**.

FLOWERS - (a) pinkish, urn-shaped, single in axils, on nodding pedicels.

FRUIT - berry, dark red to blue-black **without a bloom**, edible and sweet.



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NOTE: Regarding C layer designation
see Appendix II.

Vaccinium ovalifolium
(Oval-leaved huckleberry)

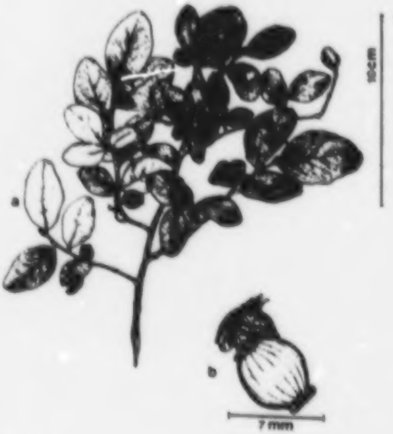
ERICACEAE

SHRUB - slender, spreading, deciduous, to 1.5 m tall; old branches greyish; young twigs brownish to yellowish.

LEAVES - old growth leaves oval-shaped (a), blunt at both ends, up to 4 cm long, entire or nearly so, green above, lighter beneath, leaves on new growth variable.

FLOWERS - (b) pink "bells", **appearing before leaves.**

FRUIT - **blue-black berries with bluish bloom;** very edible and of considerable size.



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Vaccinium oxycoccos
(Wild cranberry, Bog cranberry)

ERICACEAE

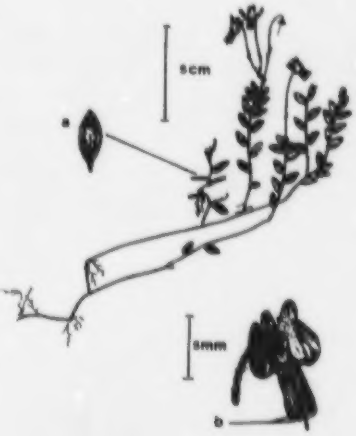
SHRUB - **creeping and vine-like** to 4 dm tall; stems slender with brown to black bark, glabrous to finely hairy.

LEAVES - alternate, elliptic-ovate, 6-10 mm long, edges rolled under (a), dark green above, **greyish-waxy beneath without hairs.**

FLOWERS - **deep pink with recurved petals and protruding stamens** (b), borne on a long slender nodding stem; often solitary, not more than 3.

FRUIT - **dark red berry;** resembles domestic cranberry in taste.

HABITAT - primarily restricted to *Sphagnum* bogs.



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NOTE: Compare with *Gaultheria hispidula*.
Regarding C layer designation see Appendix II.

Vaccinium parvifolium (Red huckleberry)

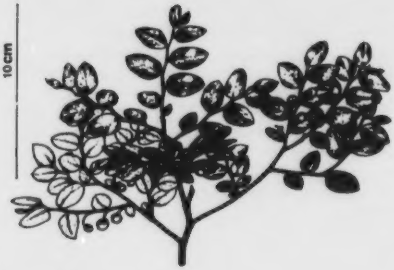
ERICACEAE

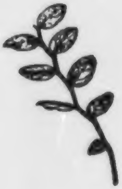
SHRUB - erect to 4 m tall, **young and old branches green and sharply angular**.

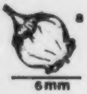
LEAVES - oval to oblong, to 3 cm long, entire at maturity, finely serrated when juvenile.

FLOWERS - (a) greenish-yellow or pinkish, somewhat bell-shaped, borne singly on short pedicels.

FRUIT - **bright red berry**; edible, sour taste but of good flavour.







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Vaccinium scoparium (Grouseberry)

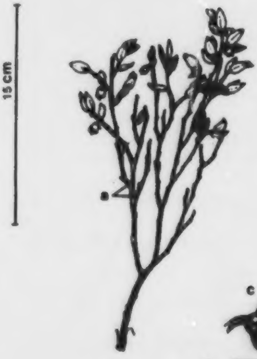
ERICACEAE

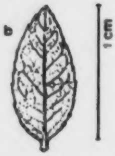
SHRUB - low **broom-like** to 25 cm tall with many fine, erect, strongly angled (a), green to yellowish-green, glabrous branches.

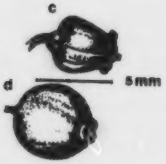
LEAVES - lanceolate (b), up to 12 mm long, finely toothed, glabrous, light green, shiny above, dull beneath, conspicuously veiny with a prominant mid-rib.

FLOWERS - (c) pink, bell-shaped, single in axils on nodding pedicels.

FRUIT - (d) **bright red berry**, edible and sweet.







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SX					▨		▨						■	■		■	■	▨		
SM					▨		▨						■	■		■	■	▨		
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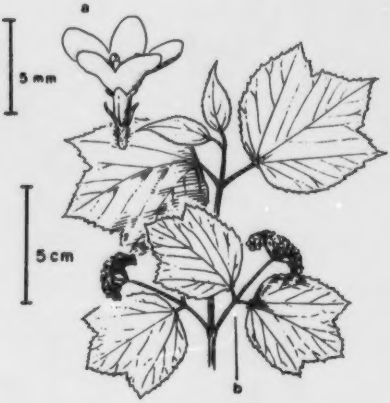
SHG					▨		▨						■	■		▨	▨	▨		
HG					▨		▨						▨	▨		▨	▨			
SHD																				

Viburnum edule (High-bush cranberry)

CAPRIFOLIACEAE



SHRUB - straggling to erect, 0.5-2.5 m tall.

LEAVES - opposite, palmately veined, shallowly 3-lobed, hairy beneath, sharply toothed, often with a pair of teeth near the junction of the blade with the stem.

FLOWERS - (a) a small cluster of a few white flowers borne on a short axillary stem with a pair of leaves (b).

FRUIT - a one-seeded red or orange berry-like drupe with a large flattened stone; edible, juicy, acid and tart.

HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
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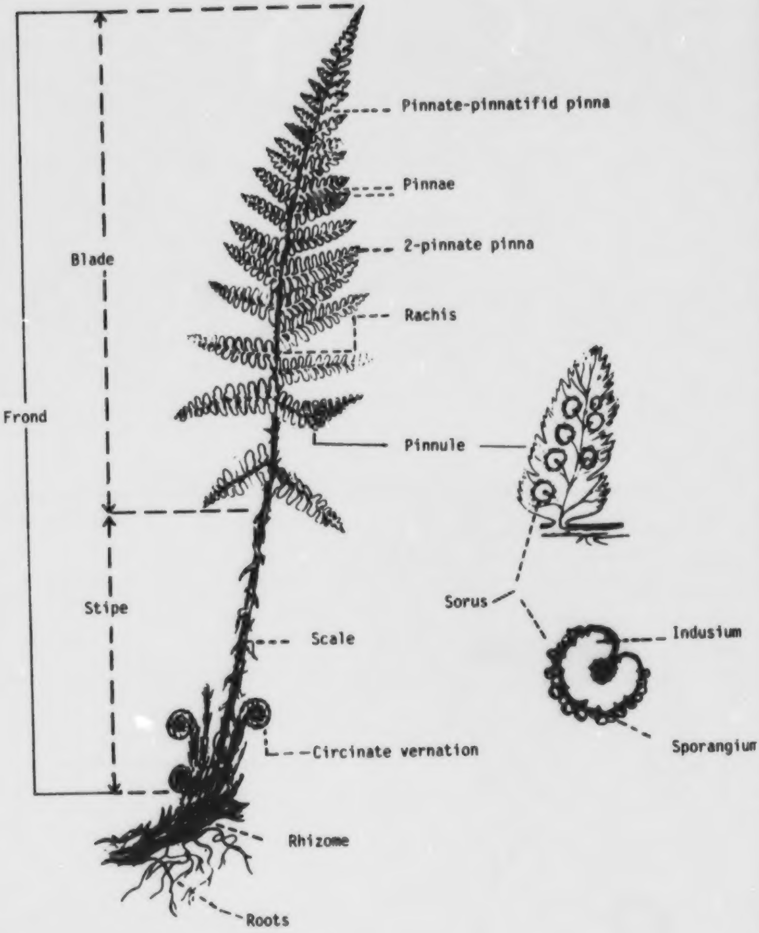
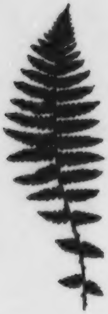
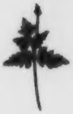
SHD																				

Illustrated Fern Characteristics

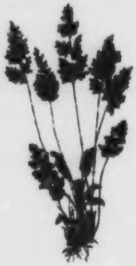

Pinnate-pinnatifid pinna
Pinnae
2-pinnate pinna
Blade
Rachis
Frond
Pinnule
Stipe
Sorus
Indusium
Scale
Sporangiu
Circinate vernation
Rhizome
Roots



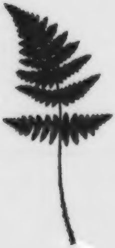
Athyrium filix-femina



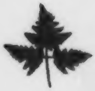
Botrychium virginianum



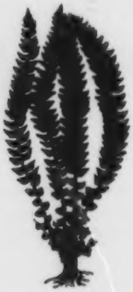
Cryptogramma crispa



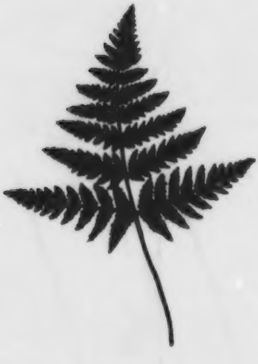
Dryopteris assimilis



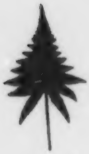
Gymnocarpium dryopteris



Polystichum lonchitis



Pteridium aquilinum



Thelypteris phegopteris

Athyrium filix-femina (Lady-fern)

FERN - from a stout, erect, ascending and chaffy rhizome.

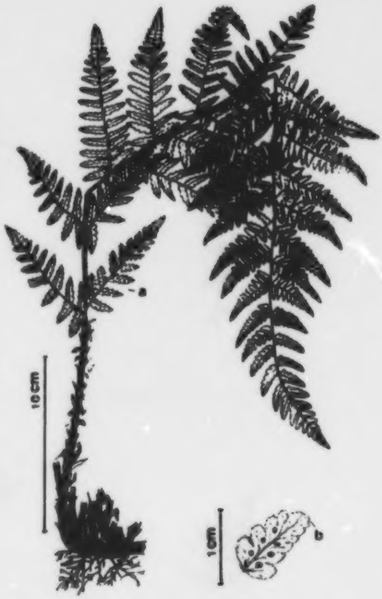
FROND - to 2 m tall, erect, spreading.

STIPE - short, fragile, straw-coloured, scaly at dark base.

BLADE - narrowly to broad lance-shaped, tapering at both ends (See silhouette p 55).

PINNAE - (a) basal ones increasingly more symmetrical.

PINNULES - serrated, with rounded tip (b).



HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
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SHD										▨	▨	▨						▨	▨	▨

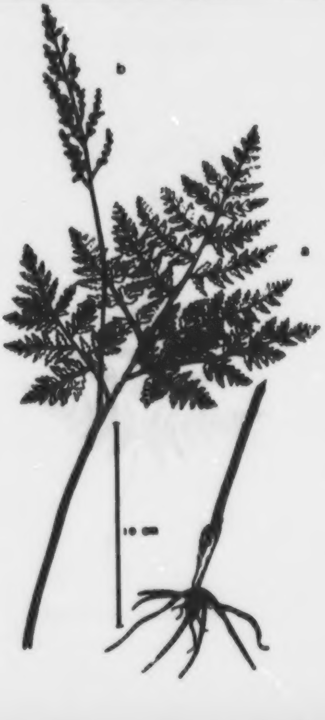
Botrychium virginianum
(Rattlesnake fern, Virginia grape-fern)

FERN - erect 1.5-5 dm tall, with a sterile blade (a) and a fertile blade (b) bearing sporangium.

STIPE - 7-25 cm long, equalling or exceeding length of sterile blade.

STERILE BLADE - deciduous, thin, deltoid.

FERTILE PORTION - a long stalked spike, 2-3 pinnately compound, 1-23 cm long.



HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
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SHD																				

Cryptogramma crispa (Parsley fern)

FERN - from a short creeping, relatively stout, tufted rhizome.

FRONDS - numerous, clustered, dimorphic.

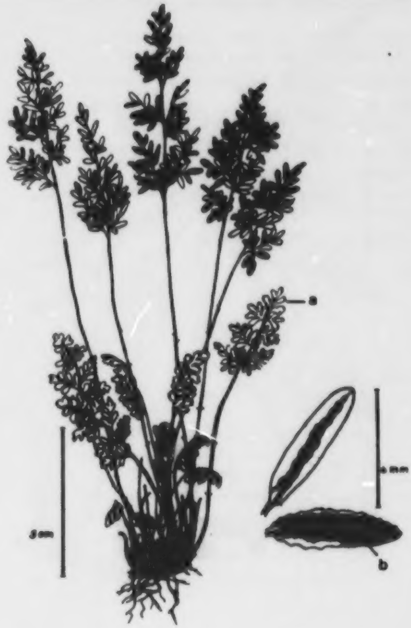
STIPE - straw-coloured, scaly at base.

BLADE - ovate or ovate-lanceolate, 2-pinnate-pinnatifid.

PINNAE - greenish, alternate or subopposite, few, short-stemmed.

PINNULES - ultimate segments ovate (a), oblong or obovate, thick, opaque with sori (b) scattered and blending together underneath on fertile fronds.

HABITAT - rock crevices and ledges, talus slopes.



NOTE: *Woodsia oregana* looks somewhat similar but does not have dimorphic fronds.

Dryopteris assimilis (Spiny shield-fern)

FERN - from a stout, erect, ascending and chaffy rhizome.

FROND - 0.3-1 m tall, spreading, mostly deciduous.

STIPE - usually shorter than blade, with brownish scales, 1.5 - 4.5 dm long.

BLADE - triangular to oblong, nearly 3-pinnate.

PINNAE - basal ones broadly triangular, usually large and not symmetrical (lower side longer) (a).

PINNULES - serrated, with pointed tip (b).

HABITAT - tolerates more acid conditions than *Athyrium filix-femina*.

	PPBG			IDF						ICH			MS		SBS	ESSF				
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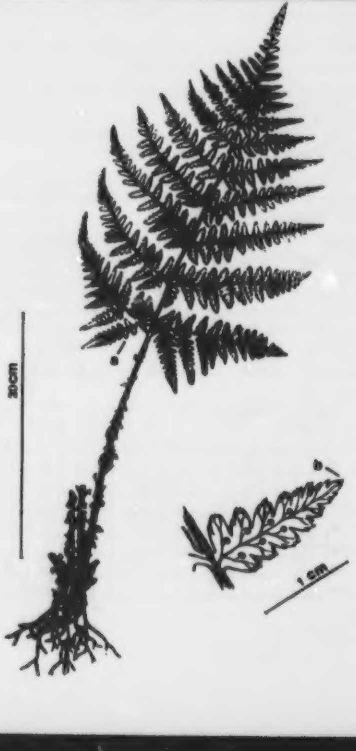


Gymnocarpium dryopteris (Oak fern)

FERN - from a slender, wide-creeping, rhizome with few pale brown scales.

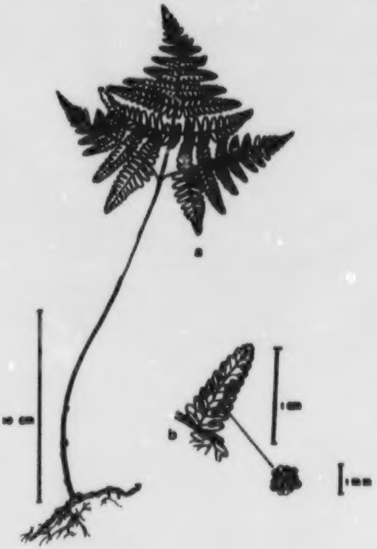
FRONDS - erect, deciduous, to 4 dm tall.

STIPE - slender, shiny, straw-coloured, occasionally with papery scales.

BLADE - broadly triangular, 3 pinnate.

PINNAE - basal ones deltoid (a), lower pair nearly as large as rest of blade and distinctly asymmetrical.

PINNULES - (b) crenate.



HABITAT

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SHD																				

Polystichum lonchitis (Mountain holly fern)

FERN - from a stout, erect, chaffy rhizome covered with old stipe-bases.

FRONDS - several, ascending in a close crown, up to 6 dm long.

STIPE - very short, straw-coloured, densely chaffy with rusty-brown scales.

BLADES - evergreen, leathery, linear to narrowly linear lance-shaped, tapering at both ends, simply pinnate.

PINNAE - alternate, basal pinnae triangular (a), middle and upper pinnae oblong-lance-shaped, sickle-shaped bases flared above (b), triangular below, unevenly toothed; sori (c), large, touching, in 2 rows, midway between mid-vein and margin, confined to upper half of frond; indusia (d) large.

HABITAT - shaded talus and rocky slopes.

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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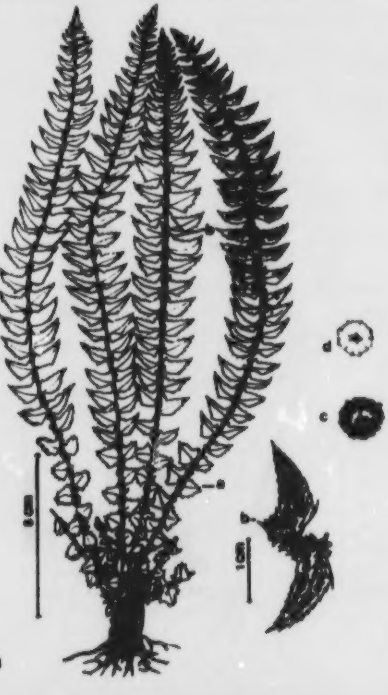

Pteridium aquilinum (Western bracken)

FERN - from a deeply subterranean much branched rhizome (a).

FRONDS - very large, deciduous, scattered along the rhizome.

STIPE - stout, relatively long, somewhat straw-coloured, tough and woody.

BLADES - coarse, 2-3 pinnately compound.

PINNAE - opposite or nearly so.

PINNULES - alternate (b), edges rolled under.

HABITAT - often weedy; colonizing roadsides clearings, etc.

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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SX						▨		▨	▨	▨	▨	▨								
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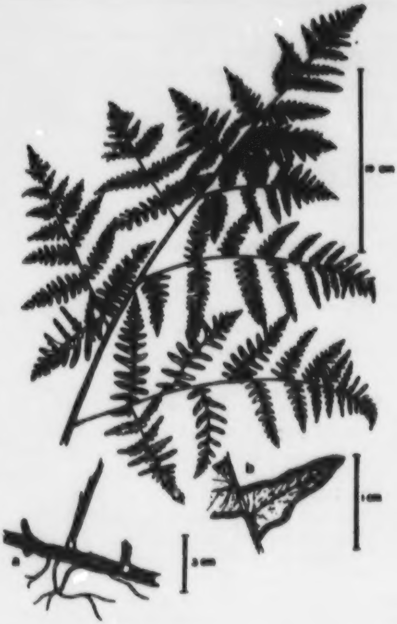
NOTE: Poisonous to livestock.



Thelypteris phegopteris (Long beech-fern)

FERN - from a long, slender, sparsely scaly rhizome.

FRONDS - deciduous, 1 to 5 dm long.

STIPE - equal or usually longer than blade, brown basally, straw-coloured upwards, sparsely scaly.

BLADES - ciliate-margined, hairy both sides, triangular-egg-shaped in outline, 10 to 20 cm long.

PINNAE - rolled back, 10 to 25 opposite or offset pairs, sessile, lowest pairs (a) largest, curving downward, upper pairs reduced.

PINNULES - oblong obtuse (b) entire or crenate, with sori borne just within the margins (c); indusia lacking.

HABITAT

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
	a	d	f	a	b	c	d	e	j	m	w	v	c	b	m	d	e	f	m	w
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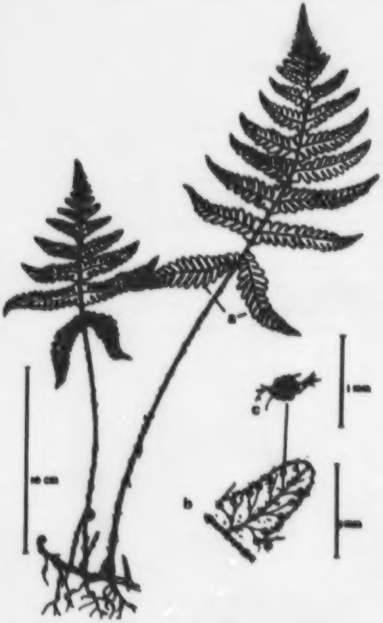

Angelica arguta (Sharp-toothed angelica)

HERB - robust, 0.3-2 m tall; **rachis not bent at point of insertion of compound leaves** (a), has a disagreeable odour.

LEAVES - large, ternate-pinnately about twice compound (2 leaflets per leaf); leaflets smooth or hairy along the veins beneath, ovate to lanceolate, pointed apex, mostly 4-14 cm long and 1.5-8 cm wide, serrate or doubly serrate and sometimes irregularly dissected.

FLOWERS - 2 or more umbels (flowers arise from one point), white (sometimes pinkish), petals smooth.

FRUIT - elliptic to obovate, 4-7 mm long and 4-5 mm wide.

HABITAT - stream banks, wet meadows, marshes and valley bottoms.

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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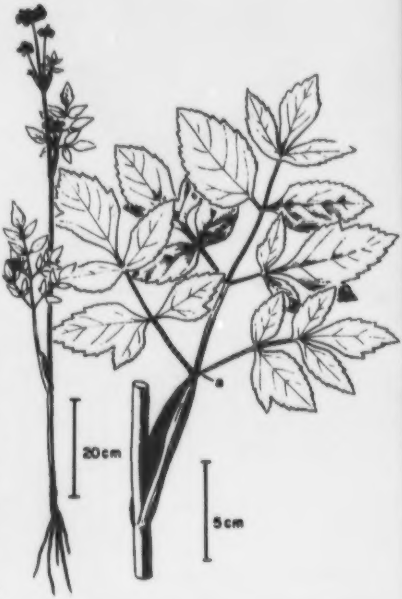
SHD																				

NOTE: *A. genuflexa* is similar, with leaves and leaflets bent downwards at point of insertion on the ascending rachis, fruit circular.



Cicuta douglasii (Water hemlock)

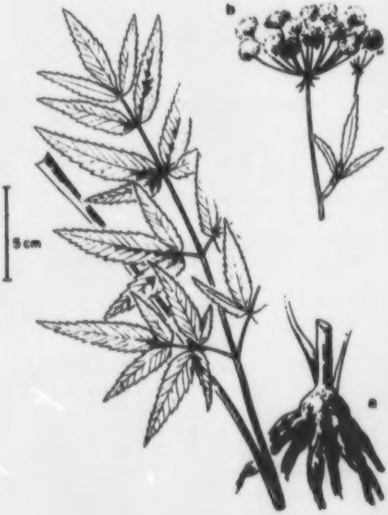
HERB - stout herb, 0.5-2 m tall; stems solitary or few together from **tuberous-thickened and chambered base** (a), several roots generally tuberous-thickened as well.

LEAVES - basal and on stem, 1-3 times ternate-pinnate, with well-defined, lance-linear to lance-egg-shaped, serrate leaflets with lateral veins often ending between the teeth.

FLOWERS - **white to greenish** in several umbels (b).

FRUIT - round-egg-shaped to circular, with corky, thickened, unequal ribs.

HABITAT - marshes, edges of streams and ditches, and in other wet low places.



NOTE: All parts of plant are highly poisonous to man as well as to livestock.

Heracleum sphondylium* ssp. *montanum
(Common cow-parsnip)

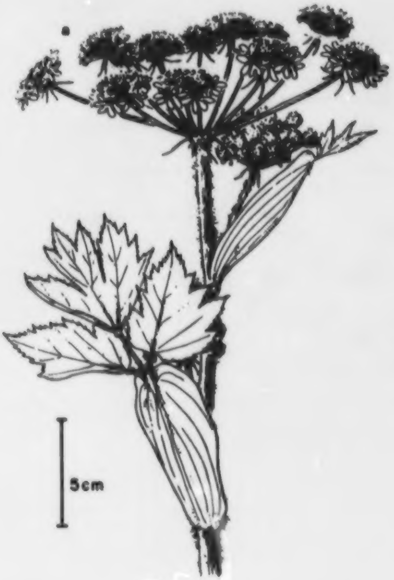
HERB - **very large, hairy**, single-stemmed perennial from stout taproot or cluster of fibrous roots, 1-3 m tall; stems hollow.

LEAVES - once ternate, with broad, distinctly petiolate, coarsely toothed and palmately lobed leaflets; 10-30 cm long and wide; **asymmetrical**.

FLOWERS - (a) white in umbels.

FRUIT - egg-shaped to heart-shaped, with or without hairs.

HABITAT - streambanks, moist slopes and moist low ground.



	PPBG			IDF						ICH			MS		SBS	ESSF				
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SHD																				

Ligusticum canbyi (Canby's lovage)

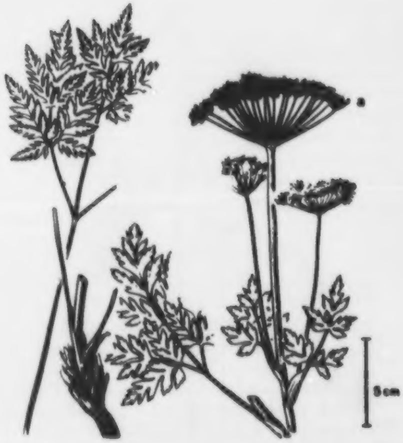
HERB - plants 0.5-1.2 m tall, generally branched above, with more than one umbel when fully developed.

LEAVES - in threes, pinnate-pinnatifid (fern-like), leaflets up to about 5 cm, ultimate segments linear to lanceolate.

FLOWERS - umbels of small yellow flowers; the terminal umbel (a) being larger than the lateral ones.

FRUIT - oblong or elliptic, 4-5 mm long, ribs of fruit narrowly winged.

HABITAT - moist or wet meadows, stream banks, and boggy slopes in the mountains, seldom on drier soils.



Lomatium dissectum (Fern-leaved lomatium)

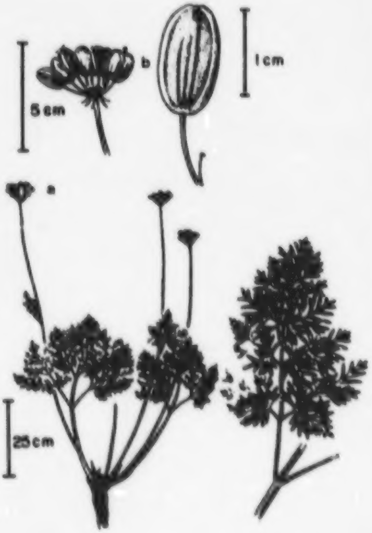
HERB - robust perennial from a large woody taproot 0.5-1.5 m tall at maturity; stems are smooth and ascending.

LEAVES - fern-like, has both basal and stem leaves with lower leaves being larger; leaves have a spicy fragrance.

FLOWERS - in an umbel (a) containing 10-30 flowers, yellow or purple.

FRUIT - is elliptic, 8-17 mm long and 4.5-10 mm wide (b).

HABITAT - rocky slopes and dry meadows, often on talus.



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Lomatium macrocarpum
(Large-fruited lomatium)

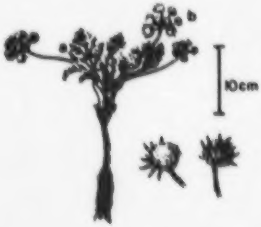
HERB - with elongate taproot thickened throughout or with a tuberous base; plants branched near the base with several stems; flowering stems are 10-25 cm long, tending to be purplish-green.

LEAVES - clustered near the ground, herbage is hairy, greyish colour, leaves (a) are fern-like with segments up to 9 mm long and 2 mm wide; petioles purple.

FLOWERS - umbels of white or purplish-white flowers (b).

FRUIT - narrow, linear oblong, 2-5 times as long as wide (c), smooth or hairy.

HABITAT - open rocky hills or plains.



	PPBG			IDF						ICH			MS			ESSF				
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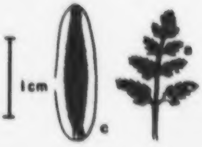
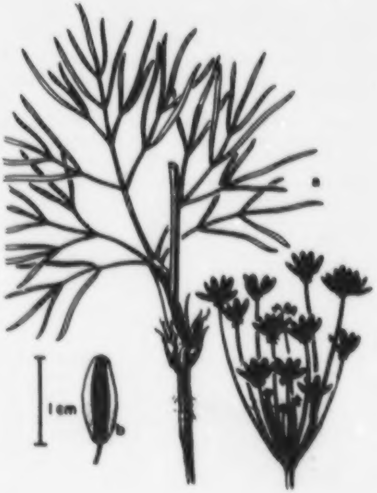


Lomatium triternatum
(Narrow-leaved lomatium)



HERB - taproot is elongate and not thickened, surmounted by a simple or few-branched crown; stems are few or solitary, erect, 2-8 dm tall.

LEAVES - finely hairy (sometimes almost smooth); usually basal leaves or low stem leaves; leaves are divided into three's or sometimes the basal leaves are in five narrow segments or leaflets, 1-10 cm long (a).

FLOWERS - umbels of white, yellow, or purple flowers.

FRUIT - oblong to elliptic (b), broadly winged.

HABITAT - open slopes and meadows, lowlands to moderate elevations.

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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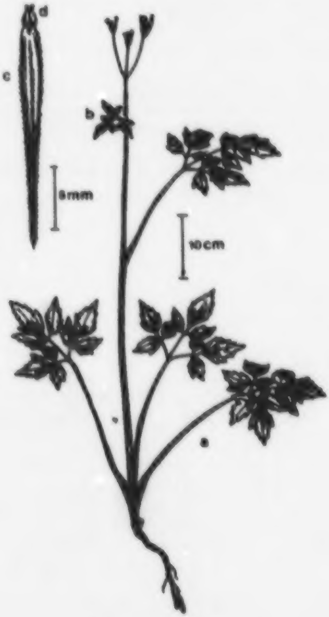
Osmorhiza chilensis
(Mountain sweet-cicely)



HERB - perennial with well developed taproot; stem solitary or sometimes 2-3, slender, 0.3 - 1 m tall, branched above. Roots may be eaten raw or cooked.

LEAVES - twice ternately compound; leaflets coarsely serrated, thin; basal leaves several, long-stemmed (a); stem leaves 1-3, with short stem (b).

FLOWERS - greenish-white, inconspicuous umbrella-shaped clusters.

FRUIT - schizocarp (c), concavely narrowed at summit and broadly beak-like near apex (d), 12-22 mm long.

HABITAT

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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NOTE: A similar species is *O. purpurea* which has purple flowers, and fruits 8-13 mm long.

ASTERACEAE - ASTER FAMILY

*See flower parts page 206

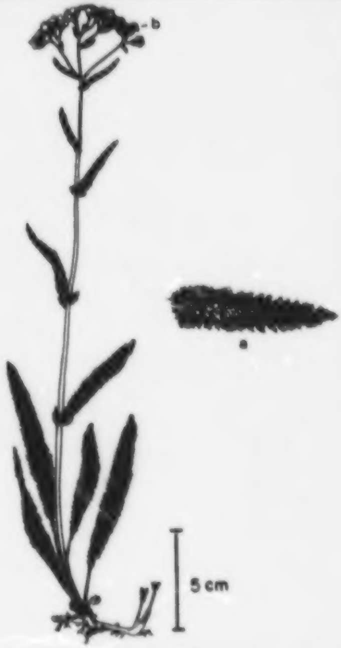
Achillea millefolium (Yarrow)

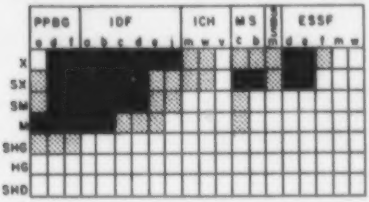
HERB - perennial, aromatic, often rhizomatous, 0.1 - 1 m tall.

LEAVES - **much pinnately dissected** (a), only lower ones with petiole; young dried leaves used to make herbal tea.

FLOWERS - white, radiate heads (b) numerous, in flat to round-topped inflorescence; rays 3-5 white, yellow centres.

HABITAT - weedy plant often found on disturbed sites; throughout B.C.





Adenocaulon bicolor
(Trailplant, Pathfinder, Silver-green)

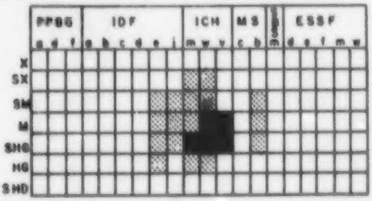
HERB - fibrous-rooted slender perennial up to 1 m tall.

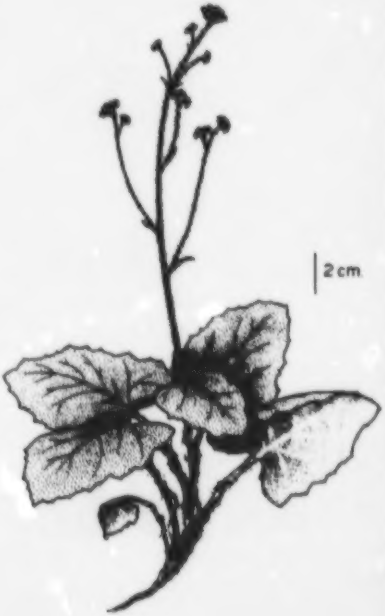
LEAVES - alternate, large, thin, deltoid to heart-shaped, 3-15 cm wide, smooth above, closely white woolly beneath; leaf margins are shallowly lobed.

FLOWERS - small, white and inconspicuous.

FRUIT - small "sticky" achenes.

HABITAT



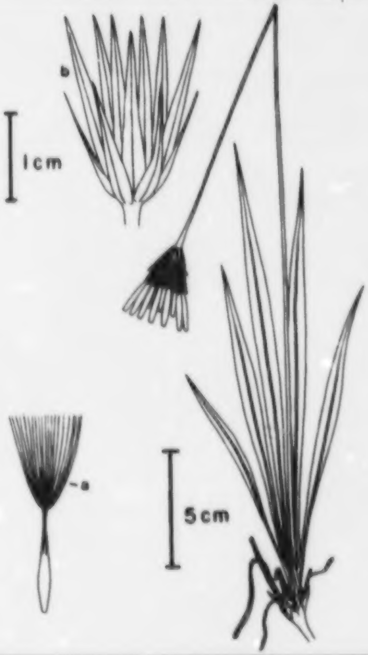


Agoseris glauca
(Short-beaked false dandelion)

HERB - glabrous or hairy, whitish, perennial 1 - 4 dm tall.

LEAVES - "rubbery" with a "milky juice" when split; linear to lanceolate, 5-35 cm long, 1-30 mm wide, entire to toothed.

FLOWERS - yellow, dandelion-like, sometimes drying pinkish; pappus hairlike (a); flowers mid-summer; involucre 1-3 cm high, the bracts overlapping, sharply pointed (b).



HABITAT

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NOTE: *Nothocalais troximoides* looks very similar with pappus composed of flattened scales rather than hairs.

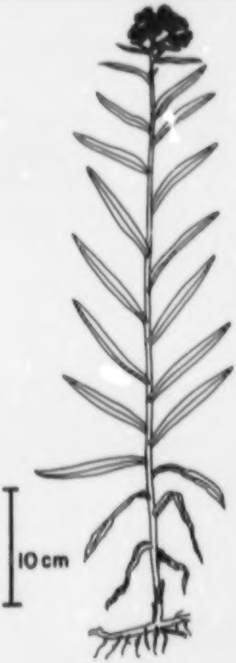
Anaphalis margaritacea
(Pearly everlasting)

HERB - weedy perennial, erect, rhizomatous, 2-9 dm tall, leafy, loosely white woolly.

LEAVES - alternate, entire, narrowly oblong, sessile, less hairy above than below, edges rolled under.

FLOWERS - numerous discoid heads crowded into a short broad inflorescence; involucral bracts pearly white, preserving well when dried.

HABITAT - occurring in forest openings, roadsides and pastures.



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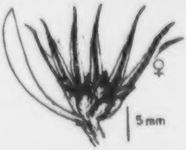
Antennaria dimorpha (Low pussytoes)

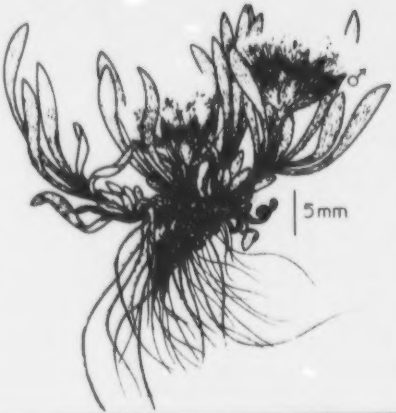
HERB - dwarf perennial to 3 cm arising from a compact base, forming appressed mats; not stoloniferous.

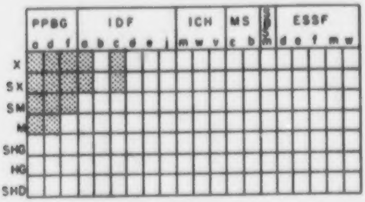
LEAVES - linear or oblanceolate up to 3 cm long and 5 mm wide, fuzzy, numerous.

FLOWERS - heads solitary on very short stems, whitish, woolly, flowering in early spring.

HABITAT - dry open places, chiefly in the foothills and lowlands; increaser on disturbed grasslands.







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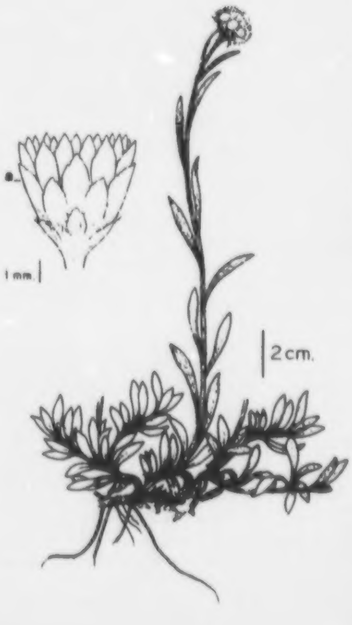
Antennaria microphylla (Rosy pussytoes)

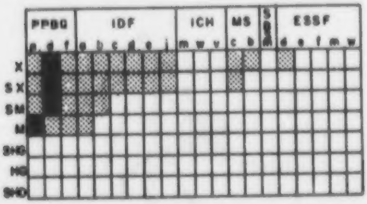
HERB - mat forming, perennial 0.5-4 dm tall, erect, not appressed as *A. dimorpha;* stoloniferous.

LEAVES - basal leaves oblanceolate or spatulate, 8-30 mm long and 2-7 mm wide, grey, fuzzy (rarely smooth above).

FLOWERS - heads several in loose cluster, deep pink to bright or dull white; **terminal portion of involucral bracts white or pink** (a).



HABITAT



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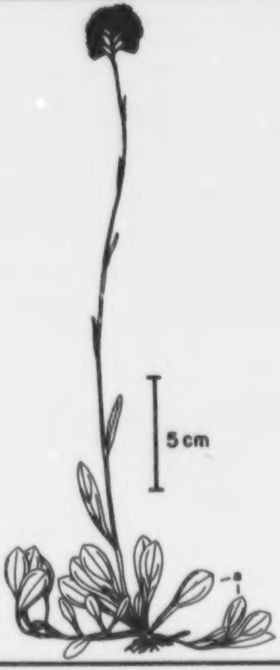
NOTE: Similar to *Antennaria parvifolia* and *Antennaria umbrinella* q.v.

Antennaria neglecta (Field pussytoes)

HERB - mat forming perennial, 1.5 - 4 dm tall; stems with narrow, sessile leaves; stolons well developed.

LEAVES - basal leaves spatula-shaped (a), almost elliptical lance-or egg-shaped but largest above middle and tapering to base, up to 2 cm wide; **persistently densely hairy with white hairs beneath, thinly hairy to without hairs and green above.**

FLOWERS - heads several in dense head-like inflorescence, whitish; involucral **bracts brown at base and tips are white, thin and transparent**; flowering late May to early August.



HABITAT

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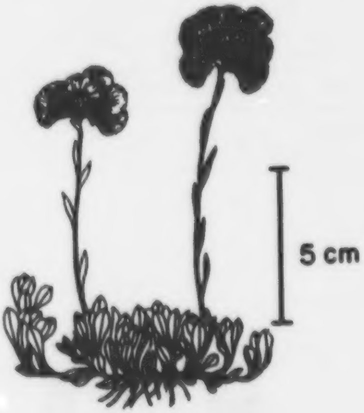
Antennaria parvifolia
(Nuttall's pussytoes)

HERB - mat-like, seldom over 15 cm high (shorter than *A. microphylla*); has numerous leafy stolons.

LEAVES - basal leaves spatulate or oblanceolate, 1-3.5 cm long and 2.5-10 mm wide, generally larger, broader and more fuzzy than those of *A. microphylla*.

FLOWERS - heads larger and more closely aggregated, and the flowering stalk longer than *A. microphylla;* generally bright white (sometimes dull); terminal portion of involucral bracts white or pink.

HABITAT - dry open places at low elevations.



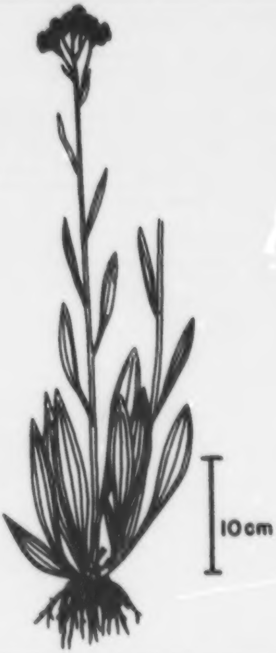
Antennaria pulcherrima* ssp. *anaphaloides
(Showy pussytoes)

HERB - tufted perennial from compactly branched caudex, 2-5 dm tall.

LEAVES - basal leaves oblanceolate, up to 15 cm long and 2 cm wide with 3 main veins; stem leaves are linear and progressively reduced upwards.

FLOWERS - several white heads in a compact cluster; scarious portion of involucral bracts white, usually with a dark spot at the base.

HABITAT - hillsides and open woods at moderate elevations.



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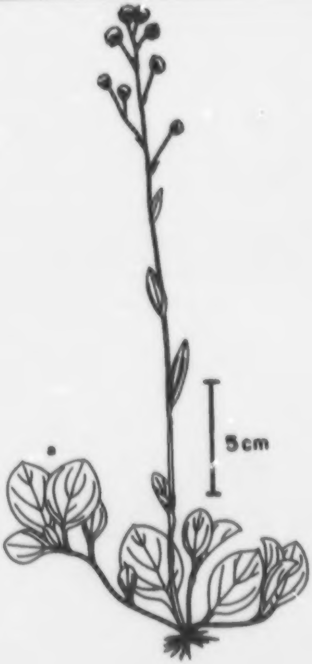
NOTE: *A. lanata* is a similar but diminutive alpine species with dark brown or greenish black involucral bracts.

Antennaria racemosa (Racemose pussytoes)

HERB - perennial with stems 1-6 dm tall, sparsely hairy below, becoming glandular above; has creeping leafy stolons.

LEAVES - basal leaves with short petioles elliptic to ovate blade (a), 1.5-8 cm long and 1-5 cm wide, **cottony-hairy beneath, green and smooth** (or almost smooth) above; stem leaves are narrower and with petioles.

FLOWERS - heads on slender stalk, in an open raceme or occasionally more crowded, pale greenish to pale brownish.



HABITAT

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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SHD																				

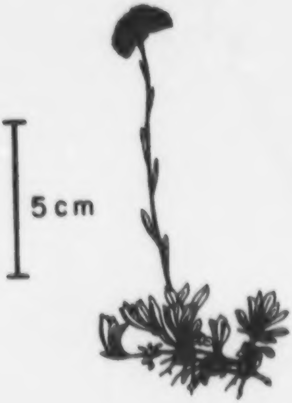
NOTE: Similar to *A. neglecta* except leaves are larger and more rotund and inflorescence is more open.

Antennaria umbrinella
(Dusky brown pussytoes)

HERB - mat forming, stoloniferous perennial up to 20 cm tall, sometimes slightly woody at the base.

LEAVES - basal leaves spatulate or oblanceolate, greyish green, woolly on both sides; stem leaves are more lance-shaped.

FLOWERS - several radiate heads in rounded cluster; brownish white; terminal portion of outer **involucral bracts brownish.**



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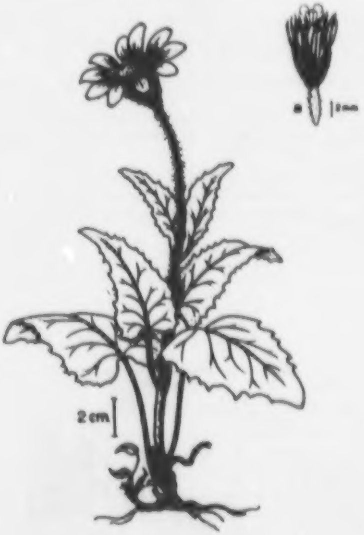
NOTE: Similar to *Antennaria microphylla*.

Arnica cordifolia (Heart-leaved arnica)

HERB - perennial from long, nearly naked rhizomes; stems solitary or few loosely clustered, 1-6 dm tall.

LEAVES - **opposite**, basal ones **heart-shaped**, long-petiolate, mostly on separate short shoots; stem leaves 2-4 pairs, more or less heart-shaped; often coarsely toothed.

FLOWERS - 1-3 radiate heads, rays yellow, **involucre densely white-hairy; achenes short-hairy (a).**



HABITAT

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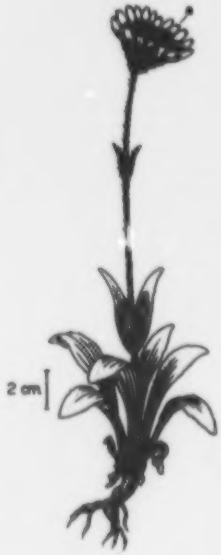
NOTE: **The opposite leaf arrangement distinguishes *Arnica* from most other genera in the Aster family.**

Arnica fulgens
(Brown-haired orange-flowered arnica)

HERB - perennial from short, free-rooting, scaly rhizomes; stem stout, 2-6 dm tall, often hairy especially the upper stem.

LEAVES - **opposite**, 3-5 nerved, margins smooth, sparsely to densely hairy and glandular; basal leaves oblanceolate to narrowly elliptic, 3-12 cm long and 1-4 cm wide, often with white or brown woolly tufts at the base: stem leaves (2-4 pairs), losing petioles and reduced upwards.

FLOWERS - radiate heads, solitary to sometimes 3, rays yellow (a), disc corollas with long white hairs.



HABITAT

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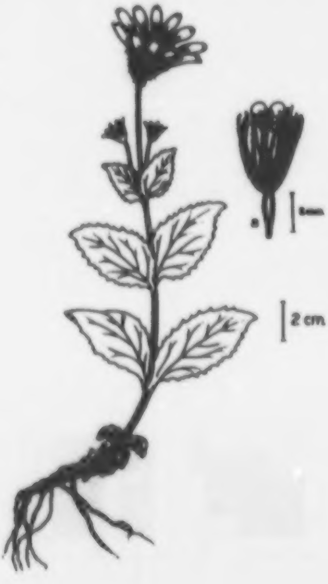
Arnica latifolia (Broad-leaved arnica)

HERB - perennial, stem 1-6 dm tall, glandular and sometimes hairy; appearing more leafy than *A. cordifolia*.

LEAVES - **opposite**, basal ones long-petiolate, sometimes on separate shoots; stem leaves 2-4 pairs, **usually broadly lance-shaped**, rarely heart-shaped, **glandular-hairy**, more or less sessile.

FLOWERS - radiate heads, 1-several, rays yellow, **involucre with few or no long hairs, achenes glabrous below or throughout** (a).



HABITAT

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NOTE: This species often hybridizes with
Arnica cordifolia.

Artemisia campestris
(Northern field wormwood)

HERB - biennial or perennial with taproot; 0.1 - 1 m tall. This *Artemisia* is **not** woody.

LEAVES - basal rosette leaves are crowded, dissected 2 or 3 times, smooth or silky, often deciduous; stem leaves are less dissected, the upper ones in three's or not dissected at all; leaves aromatic when crushed.

FLOWERS - spike-like (a) or in a diffuse panicle, brownish colour.

HABITAT - open places, often in sandy soil.

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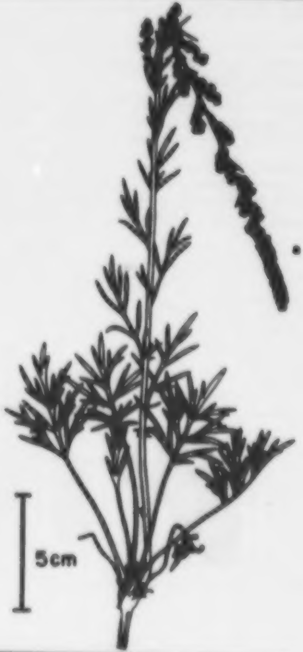

Aster ciliolatus (Lindley's aster)

HERB - perennial, with long creeping rhizomes, 0.2 - 1.2 m tall.

LEAVES - basal and lower stem leaves broadly egg-shaped to lance-shaped, rounded or heart-shaped at base, sharp-pointed at tip, sharply serrate, with long petioles (a), often deciduous; upper leaves abruptly narrowed to the broadly winged petiole (b); uppermost leaves lance-shaped, entire and sessile.

FLOWERS - radiate heads (c), few in an open inflorescence; ray flowers blue, disc flowers yellow; flowers in late summer.

HABITAT

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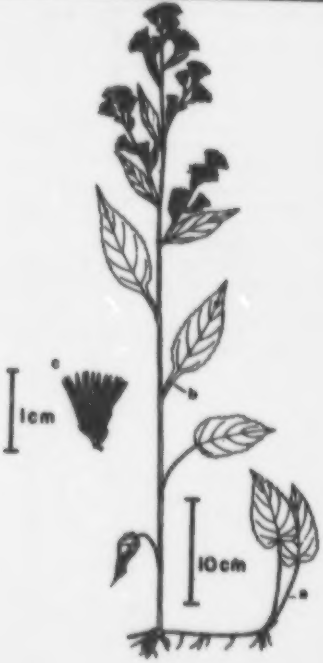


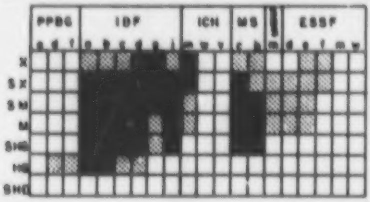
Aster conspicuus (Showy aster)

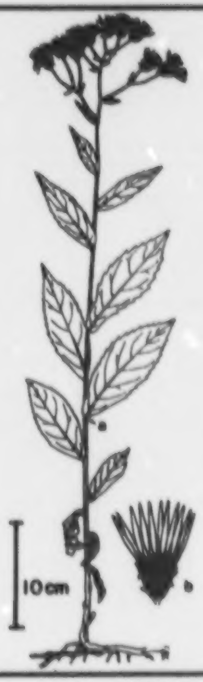
HERB - stout, perennial with creeping rhizome, 0.3-1 m tall, strongly **glandular above.**

LEAVES - oval, sharply toothed, firm, mostly **sessile** (a), the lowermost ones small and soon deciduous.

FLOWERS - radiate heads, few to many in an open inflorescence; rays blue or violet, and disc flowers yellow; **involucre densely glandular** (b); flowers in late summer.

HABITAT





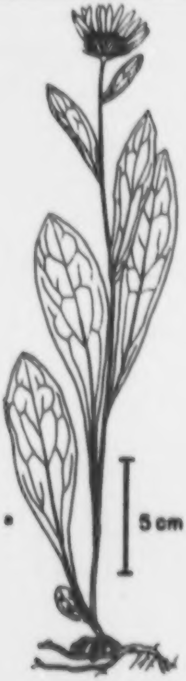
Aster foliaceus (Leafy-bracted aster)

HERB - fibrous rooted perennial from a creeping rhizome or woody base, variable in size.

LEAVES - mostly entire; lower leaves oblanceolate to obovate (a), with petioles, often deciduous; upper leaves are lanceolate to ovate, usually without petioles.

FLOWERS - radiate heads, 1 to many in an open inflorescence; rays rose-purple to blue or violet; involucre not glandular; flowering in late summer.

HABITAT - moist, often wooded places at moderate to high elevations.

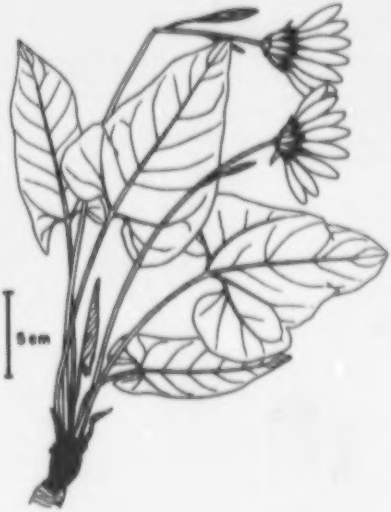


Balsamorhiza sagittata
(Arrow-leaved balsamroot, Sunflower)

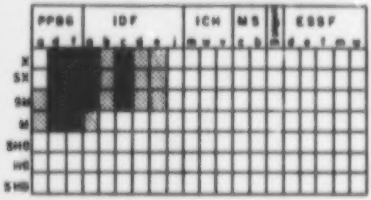
HERB - perennial with deep woody taproot and multiple woody based stems, occurring in bunches; flower-bearing stems 2-6 dm tall. **Very showy in early spring.**

LEAVES - basal leaves with petioles, arrowhead shaped or heart-shaped, up to 30 cm long and 15 cm wide, silvery (especially beneath) felt-like hairs when young, become green and smoother with age.

FLOWERS - radiate heads, yellow "sunflower", solitary on stem, many heads per bunch; flowering late April to early July.



HABITAT



NOTE: Young shoots, seeds and cooked roots are edible.

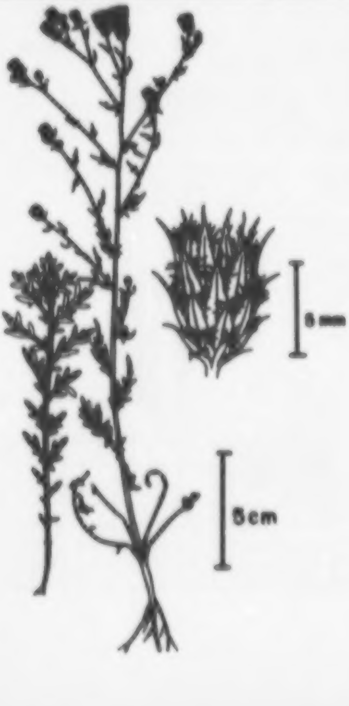
Centaurea diffusa (Diffuse knapweed)

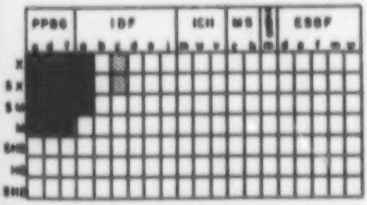
HERB - biennial to short-lived perennial, 1-6 dm tall.

LEAVES - alternate, much divided, rough hairy.

FLOWERS - heads numerous, small and narrow; bracts ending in a rigid often spreading spine; flowers are white or purplish.

HABITAT - a weed commonly found in the southern interior (invader species).





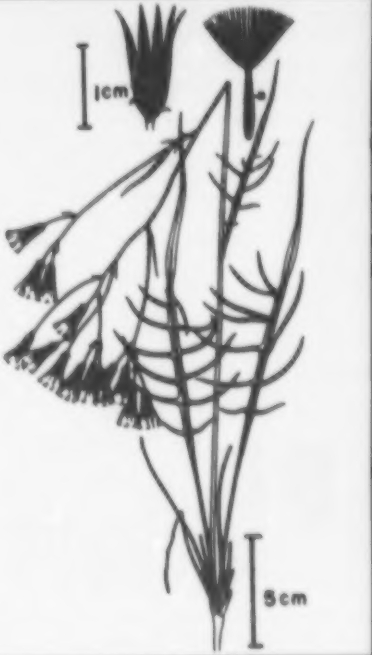
NOTE: *C. maculosa* has bracts on the flower heads which lack the long spines and have a terminal blackish fringe.

Crepis atrabarba (Slender hawk's beard)

HERB - perennial with 1 or 2 stems from a taproot, up to 7 dm tall; when stem is cut, "milky" juice is apparent.

LEAVES - grey, slightly woolly when young, often hairless when older; basal leaves 10-35 cm long, pinnately lobed; upper leaves linear and entire.

FLOWERS - 3-30 radiate heads, yellow, achenes greenish (a).



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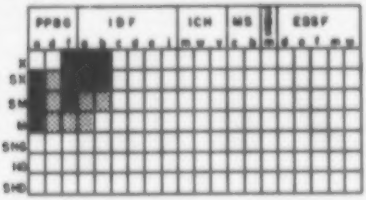

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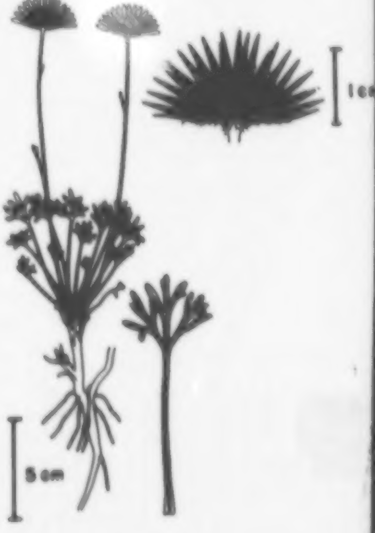
Erigeron compositus (Cut-leaf fleabane)

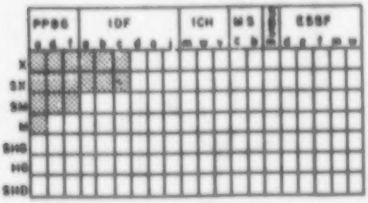
HERB - perennial with a taproot and woody base, 3-25 cm tall.

LEAVES - densely glandular, hairy to almost smooth; basal leaves dissected into three sections; stem leaves few, mostly linear and not dissected.

FLOWERS - radiate heads solitary, white to pink or blue rays, yellow centre; flowering in early spring.

HABITAT -





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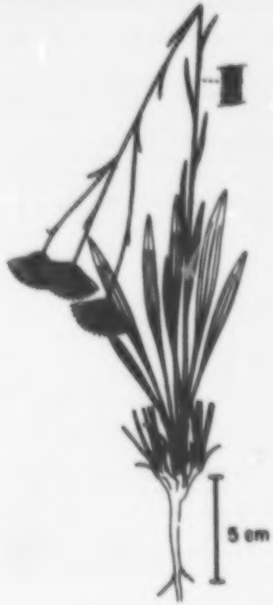
Erigeron corymbosus
(Long-leaved fleabane)

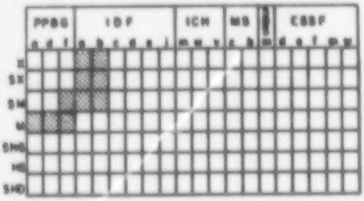
HERB - perennial with a taproot and woody base, 1-5 dm tall, generally purplish at the base.

LEAVES - densely hairy, basal leaves 3-nerved, elongate,pointed at apex, up to 25 cm long (including petiole) and 1 cm wide; leaves on stem reduced.

FLOWERS - radiate heads, 1-16, deep blue occasionally pink; usually flowering in June and July.

HABITAT - usually in dry areas, often among sagebrush.





	PPBG			IDF						ICH			MS			ESSF				
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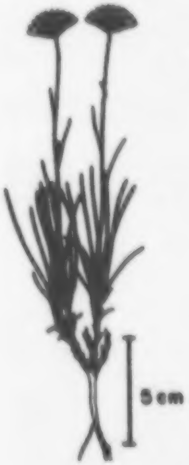
Erigeron linearis (Fine-leaved fleabane)

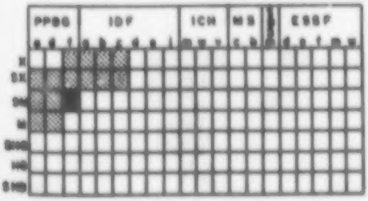
HERB - perennial, 5-30 cm tall, with stout taproot and branched woody stem base, the stem bases and basal leaves are hardened and stiff, straw-coloured to purplish.

LEAVES - grey with fine stiff short hairs, leaves are linear 1.5-5 cm long.

FLOWERS - radiate heads, solitary or few, yellow; flowers in spring.

HABITAT - dry, often rocky soil, from plains and foothills to moderate mountain elevations.





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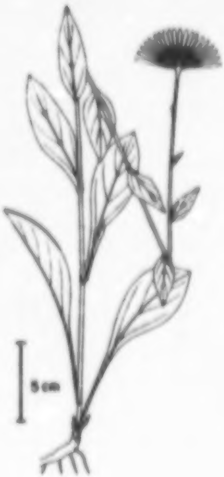
Erigeron peregrinus (Subalpine fleabane)

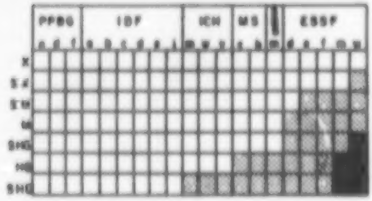
HERB - fibrous rooted perennial 2-7 dm tall, leafy.

LEAVES - basal leaves oblanceolate, the stem leaves are more ovate and not generally reduced.

FLOWERS - radiate heads solitary or few, blue to purplish-pink, petals are toothed at the tip; flowering in late summer.

HABITAT - moist meadows, streamsides, or bogs at moderate to high elevations.





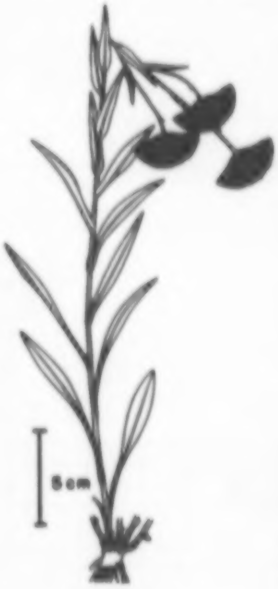
Erigeron speciosus (Showy fleabane)

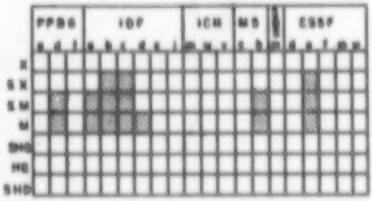
HERB - perennial with a woody stem base, the stems clustered, 1.5-8 dm tall, very leafy, generally smooth.

LEAVES - often triple nerved; the lower oblanceolate or spatulate, with petioles; mostly deciduous; the others abundant and without petioles.

FLOWERS - 1-13 radiate heads, blue (rarely white) with yellow centres; flowering in late summer.

HABITAT - open woods and openings in wooded areas, mostly in the foothills and at moderate elevations in the mountains.





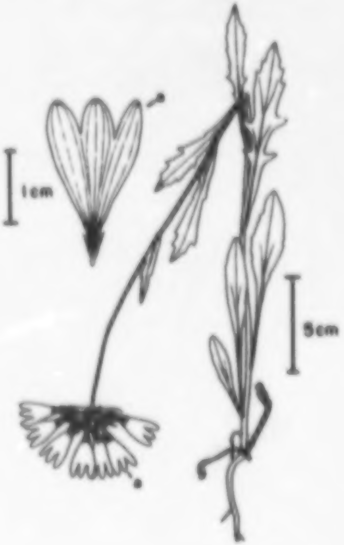
Gaillardia aristata **(Brown-eyed Susan)**

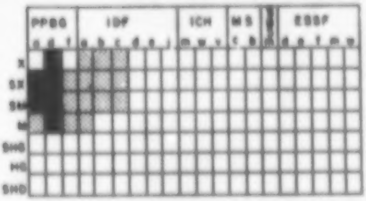
HERB - perennial from a slender taproot, stems 1 to several from the base, usually not branched, stem is hairy, 2-7 dm tall.

LEAVES - narrow, linear-oblong to lance-ovate, up to 15 cm long and 2.5 cm wide, sometimes all basal; margins smooth to coarsely toothed or pinnately lobed, hairy, olive-green, variable when young.

FLOWERS - heads solitary or few, the yellow rays (a) **are deeply notched at their tips**, centre is reddish-brown; flowering June to early August.

HABITAT - dry meadows and other open places.





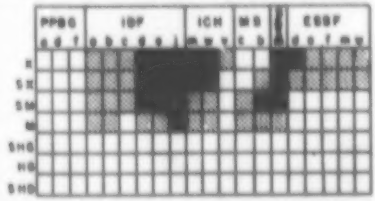
Hieracium albiflorum **(White hawkweed)**

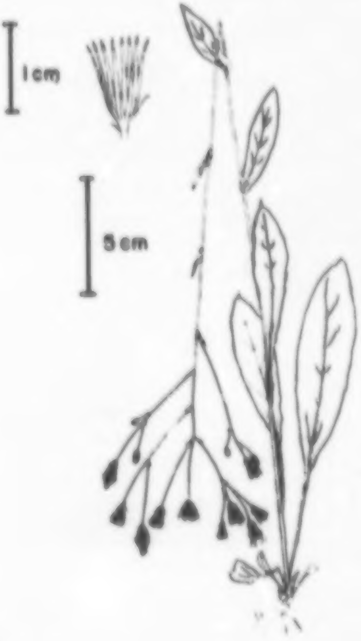
HERB - 0.3-1.2 m tall, the stem with loose long hairs at the base, becoming smooth upwards (has no star-like hairs), exudes "milky juice" when split.

LEAVES - sparsely or moderately long-haired, basal leaves persistent and often tufted, 4-17 cm long and 1.2-4.5 cm wide; the upper leaves are more reduced.

FLOWERS - **white**, heads are several or many, each on a slender pedicel in an open inflorescence; flowering late June to August.

HABITAT





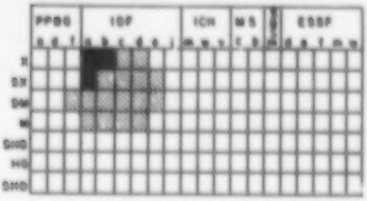
Hieracium cynoglossoides
(Hound's-tongue hawkweed)

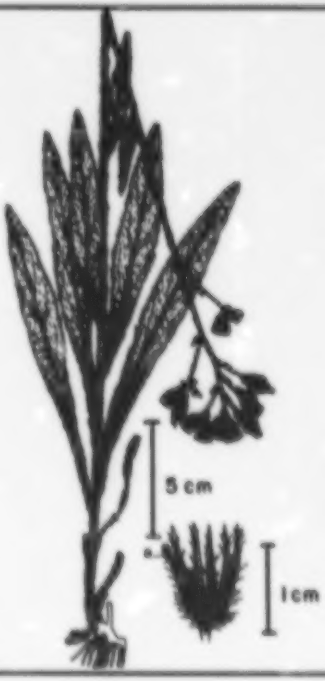
HERB - plants 0.3-1.3 m tall, densely pubescent throughout with long, coarse, loose or spreading white bristly hairs and some fine stellate (star-like) hairs.

LEAVES - bristly hairy, basal leaves elongate, persistent and somewhat crowded, 10-25 cm long, 1-3 cm wide; middle and upper leaves reduced.

FLOWERS - yellow, heads are few to many in a rounded inflorescence; involucre bristly with short blackish gland-tipped bristles (a).

HABITAT - dry open places in foothills and at moderate elevations (Okanagan).





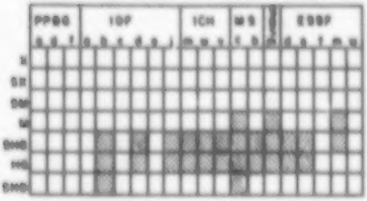
Petasites palmatus (Palmate colt's-foot)

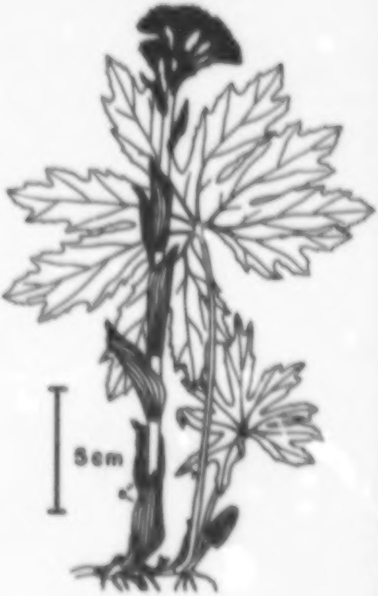
HERB - perennial, from creeping rhizomes; stem erect, 1-5 dm tall.

LEAVES - basal leaves long petioled, hairy with white hairs beneath, palmately or pinnipalmately veined and lobed, serrate, expanding with or shortly after flowers; bracts on stem in shingled arrangement (a).

FLOWERS - inflorescence with several or numerous bell-shaped heads; flowers whitish, appearing early in the year, usually before the leaves.

HABITAT - meadows, swampy places, moist woods.



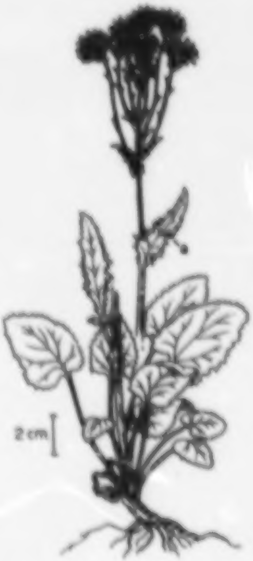


Senecio pseudaureus
(Western golden ragwort)

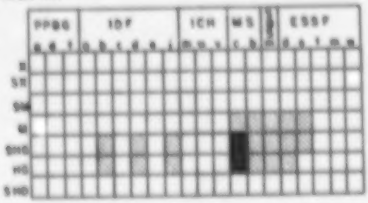
HERB - fibrous rooted perennial from a short rhizome or woody stem base, 3-7 dm tall, essentially glabrous.

LEAVES - relatively thin; basal leaves are heart-shaped or squared off at the base, toothed, and have long petioles; stem leaves are few and reduced upwards, pinnately toothed towards base of leaf (a), and without petioles.

FLOWERS - several radiate heads, ray flowers are yellow; involucral bracts equal, usually purplish-tipped.



HABITAT



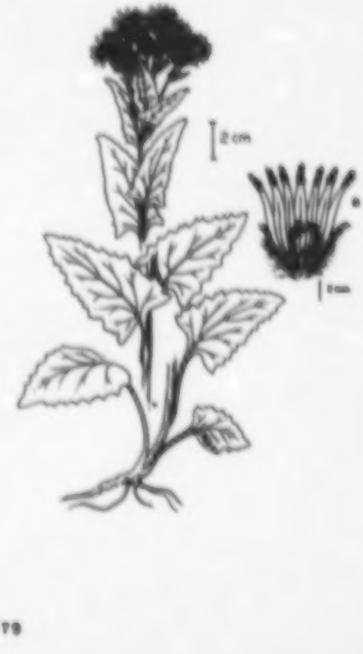
Senecio triangularis
(Arrow-leaved ragwort)

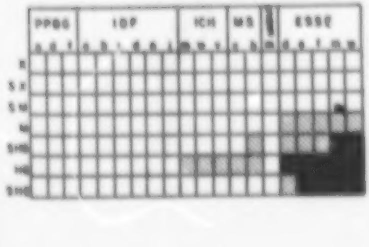
HERB - several stemmed, coarse and lush perennial, 0.3 - 1.5 m tall.

LEAVES - **numerous, narrowly triangular, strongly toothed**; those near the base with long petioles, those above becoming sessile.

FLOWERS - several radiate heads, ray flowers are yellow; involucral bracts (a) equal, black-tipped.

HABITAT - streambanks and moist places; moderate to high elevations.





Solidago spathulata
(Spike-like goldenrod)

HERB - perennial from a woody stem base or a short, stout, rhizome, 5-8 dm tall, usually sticky or gummy involucre and flower stems.

LEAVES - basal leaves are oblanceolate to spatulate (a), toothed or only slightly toothed, mostly blunt or rounded tips, up to 15 cm long (including petiole) and 3 cm wide, persistent; the stem leaves are few and progressively reduced upwards.

FLOWERS - short and compact to elongate and narrow (spike-like) inflorescence, each flower having a relatively long pedicel; disc flowers, yellow; approximately 8 rays.

HABITAT -

	PPBG			IDF						ICH			MS		SWB	ESSF				
	a	d	f	a	b	c	d	e	j	m	w	v	c	b	m	d	e	f	m	w
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SX		■	▨	▨		▨														
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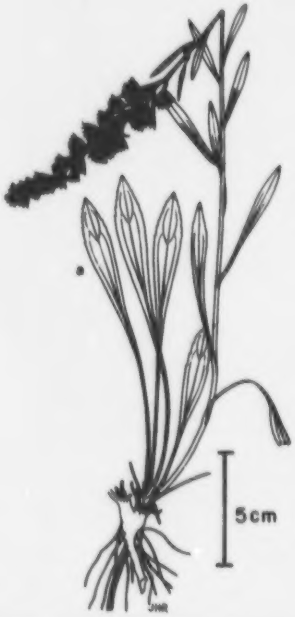
NOTE: *S. multiradiata* is a similar looking alpine sp. having ciliate margined petioles and having more rays.



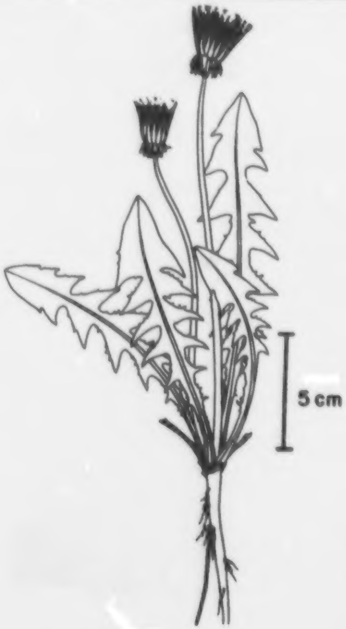
Taraxacum officinale (Common dandelion)

HERB - well known "Dandelion" that invades our lawns and other disturbed sites.

LEAVES - sparsely hairy beneath along midrib, otherwise smooth; leaf margins incised with the lobes directed backwards, the lobe on the end of the blade is larger than the others; blade tapers to a narrow petiole-like base.

FLOWERS - common yellow dandelion which forms a conspicuous ballof seeds.

HABITAT - lawns and disturbed sites, openings in the forest and grasslands.



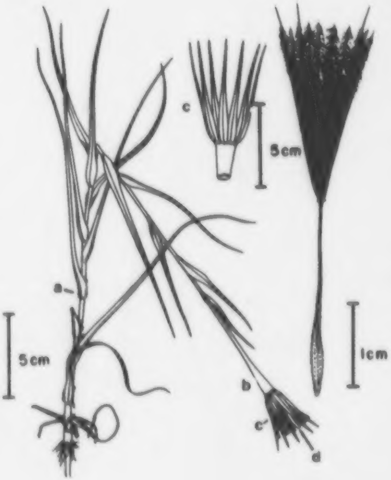
Tragopogon dubius
(Yellow salsify, Goat's beard, Oyster plant)

HERB - biennial or annual, .3-1 m tall, exudes milky juice when cut.

LEAVES - elongate, grass-like, tapering uniformly from base to apex, woolly-hairy when young; clasp the stem near the base of the leaf (a).

FLOWERS - **flowering stems are evidently enlarged under the flower** (b), heads are pale lemon-yellow and dandelion-like; the bracts (c) are distinctly longer than the rays (d); forms a conspicuous ball of seeds (like dandelion); flowers close in the afternoon.

HABITAT - invader of roadsides and other open relatively dry places.



	PPBG			IDF						ICH			MS		SBS	ESSF				
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SX	■	■	▨	▨	▨	▨	▨	▨	▨											
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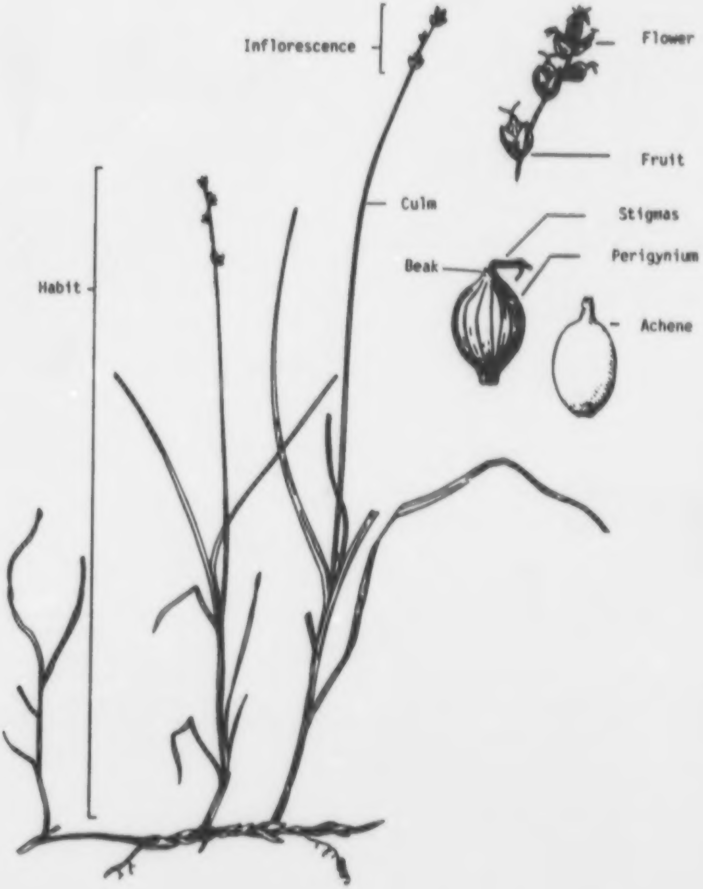
NOTE: *T. pratensis* is similar without the enlarged flowering stem and has bracts equal or shorter than the rays.

Illustrated Sedge Characteristics


Inflorescence
Flower
Fruit
Culm
Stigmas
Beak
Perigynium
Habit
Achene

Carex aquatilis (Water sedge)

SEDGE - stems 0.3-1.0 (1.5) m tall, borne singly or a few stems together arising from stout deep-seated rhizomes (a) forming large clumps or turf.

LEAVES - elongate, flat or nearly so, 2-7 mm wide.

INFLORESCENCE - 3-7 cylindrical spikes, not closely crowded, 1.5-5 cm long; **terminal spike male** (b), other female or mixed, with male on top; **lowest bract** (c) **elongate and leafy, 7-25 cm long usually equaling the inflorescence;** scales on female flowers reddish brown (d) to purplish black with a pale midrib, narrower than the fruit.

FRUIT - achene doubly-convex-shaped, shorter and narrower than the perigynium; perigynium (e) 2.0-3.3 mm long, strongly flattened with well developed marginal nerves only, speckled with reddish brown on a pale coppery to greenish background; stigmas 2 (f).

HABITAT - in shallow water or very wet soil, often in swampy places or at the margins of lakes and ponds.

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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SX																				
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SHG																				
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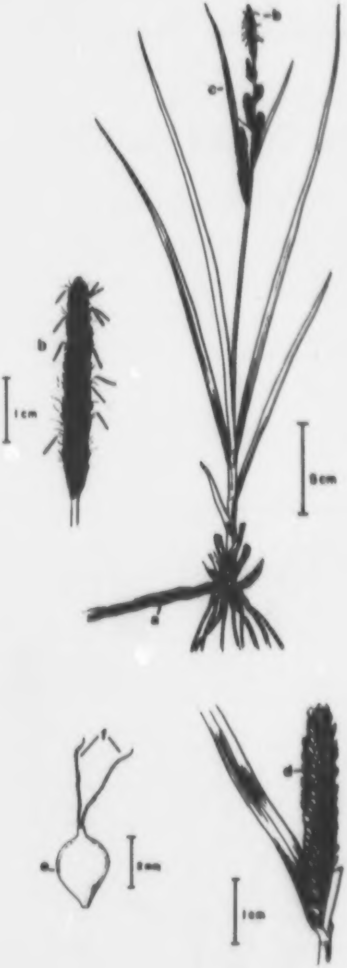
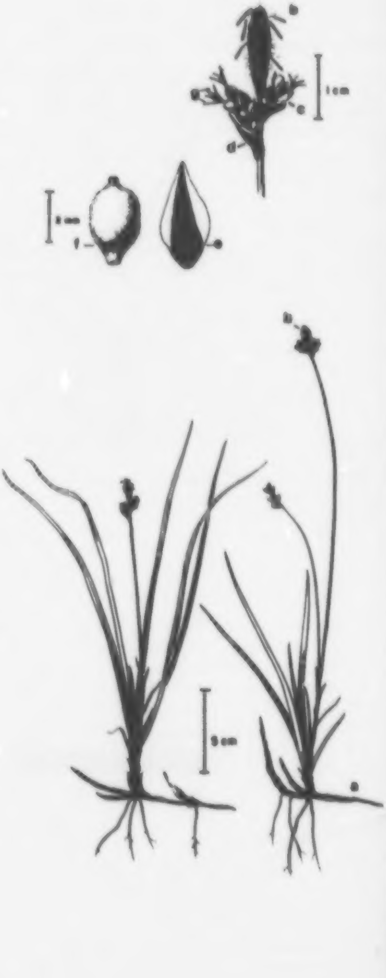




Carex concinnoides (Northwestern sedge)

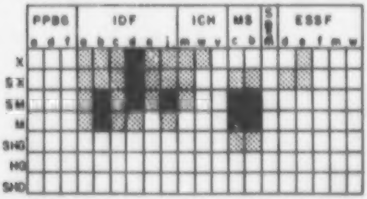
SEDGE - 1.5-3.5 dm tall with stems arising singly or few together from a well developed system of creeping rhizomes (a).

LEAVES - firm, 2-5 mm wide, sometimes shorter, and sometimes longer than the culm.

INFLORESCENCE - male spikes terminal (b), solitary, 8-20 mm long; female spikes (c) 1-3, sessile, to 1 cm long, 5-12 flowered; bract (d) subtending the lowest female spike, 1 cm long or less with awn-like tip; pistillate scales (e) dark brown with transparent margins.

FRUIT - achene, 4 nerved; perigynium (f) 2.5-3 mm long, hairy, plump, with short beak; stigmas 4 (g).

HABITAT



	PPBG			IDF						ICH			MS		S	ESSF				
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X				▨	▨	▨	■	▨	▨	▨	▨						▨			
SX				▨	▨	▨	■	▨	▨	▨			▨	▨		▨	▨			
SM				▨	■	▨	■	▨	■	▨			■	■						
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NOTE: *Carex concinna* (Low northern sedge) is similar to the above and can occur in the same habitat. Differentiating features are: male spike is smaller 3-7 mm long; leaves are narrower (1-3 mm) and never longer than the culm; stigmas 3.

Carex disperma (Soft-leaved sedge)

SEDGE - soft slender plants 1-4 dm tall with single to several stems arising from a system of slender rhizomes (a).

LEAVES - lower leaves reduced to scales; upper leaves flat, 1-2 mm wide all borne on the lower part of the stem.

INFLORESCENCE - spikes slender linear, sessile; **spikelets small and few-flowered**; 1-3 male flowers on the top (b) with female flowers below (c); female scales thin, dry and chaffy, translucent, equal or shorter than the fruiting body.

FRUIT - achene doubly-convex-shaped, perigynium (d) 2-3 mm long; many-nerved, ending in a short beak; stigmas 2 (e).

HABITAT - swamps, bogs, wet woods and shady meadows.

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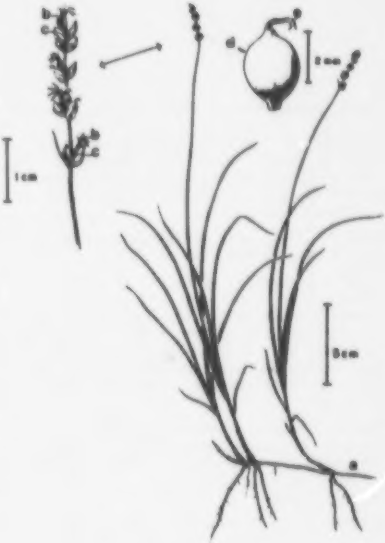

Carex nigricans (Black alpine sedge)

SEDGE - 3.5 dm tall, loosely tufted, rhizomatous (a).

LEAVES - lower leaves scale-like; leaf blades numerous, 4-9 per stem, firm and flat, 4-13 cm long, 1.5-3.0 cm wide, **mostly smooth with somewhat rough margins.**

INFLORESCENCE - spike solitary, with male flowers above (b), female flowers (c) below, oblong, rounded 1-2 cm long, 6-10 mm wide; **female flowers with dark brown scales with a thin margin and a pale midrib.**

FRUIT - achene 3-angled; perigynium (d), 3-4.5 mm long, lance-shaped to oval with pair of marginal nerves only, short-beaked, dark brown to black at the tip and paler near the base; stigmas 3 (e).

HABITAT - meadows, stream banks, late snow patches at high elevations in the ESSF, ESSF parkland and AT zones.

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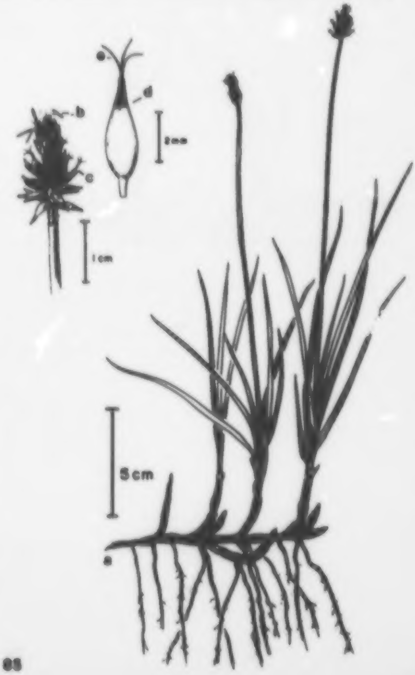


Carex paupercula (Poor sedge)

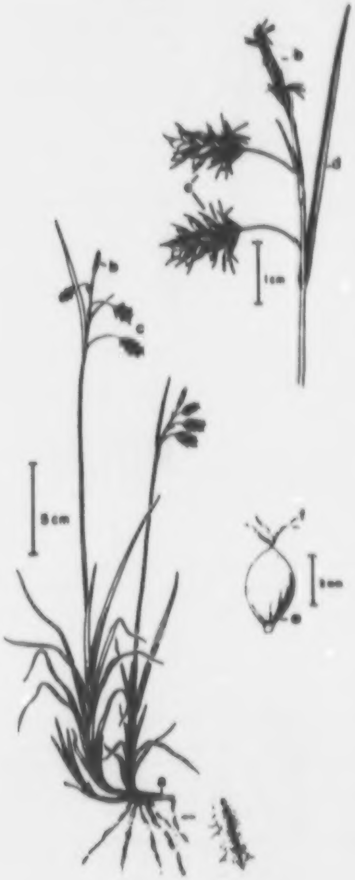
SEDGE - 1.5-7 dm tall, loosely tufted on short or long rhizomes (a); leaves are shorter than culm and commonly persistent around the base; roots are covered with yellowish woolly hairs.

LEAVES - flat, well developed at base, smooth, blue-green, 1-3 mm wide.

FLOWERS - terminal spike (b) is male, linear, 1.0-1.5 cm long; 2-3 female spikes (c) are pendulous, short and cylindrical, 1-2 cm long, the lowest one subtended by a leafy bract 2-10 cm long (d); scales on female spikes brown often with a green midstripe, sometimes with a short awn.

FRUIT - 3-sided achene; perigynia (e) 2.3-3.1 mm long, pale greenish to straw coloured with a very short beak, prominent marginal nerves on each face; stigmas 3 (f).

HABITAT - *Sphagnum* bogs, circumboreal.



NOTE: *Carex limosa* is a similar species but the leaves are scale-like and not persistent at the base.

Carex rossii (Ross' sedge)

SEDGE - 1-3 dm tall, densely tufted from short ascending rhizome (a); culms are slender equalling or shorter than the leaves.

LEAVES - elongate, lax, often surpassing the culm, 1-4 mm wide.

INFLORESCENCE - 4-5 spikes, the lower subtended by a leafy bract 2-5 cm long (b); the terminal spike is linear and male (c); female spikes (d) are few and lax-flowered and commonly short peduncled, long peduncled spikes may arise from the base of the culm where they remain concealed among the leaves (e).

FRUIT - a 3-sided achene; perigynia (f) finely hairy, 2.5-4.5 mm long including the 0.4-1.8 mm beak, ovoid to sub-globose with a narrowed base, 2 prominent marginal nerves; stigmas 3 (rarely 2).

HABITAT

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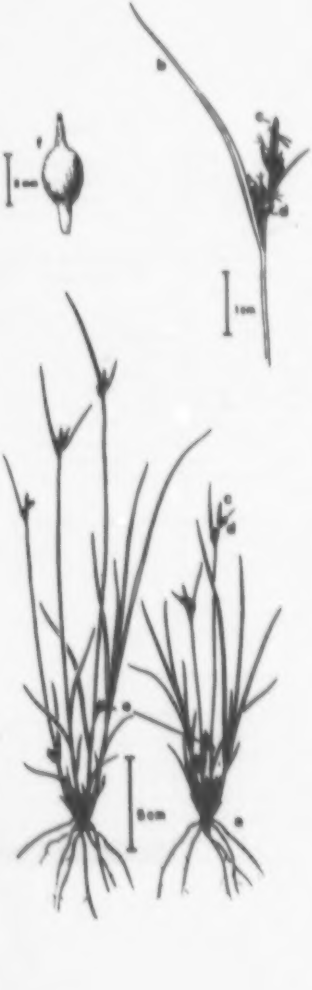


Carex rostrata (Beaked sedge)

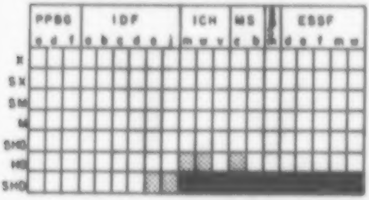
SEDGE - one of the most common sedges; 0.5-1.2 m tall, stems arising singly or few together from stout, deep seated, elongate creeping rhizomes (a), sometimes forming a dense sod.

LEAVES - **smooth with regular knobby septa (b) on the inside of the elongate, flat blades, 4-12 mm wide.**

INFLORESCENCE - several remote flowering spikes form an elongate, erect inflorescence; male spikes (c) terminal, 2-7 cm long, 2-4 cm thick; **female spikes (d) on the bottom**, the lower mostly long-stalked, the others sessile; lowest bract elongate (e), 1-2 times as long as the inflorescence; scales on female flower straw-coloured to dark reddish brown, narrower and shorter than perigynium, pointed with a small bristle.

FRUIT - achene 3-angled; perigynium (f) 4-7 mm long, with a round body and abrupt short beak, 8-16 nerved, shiny, pale green with a reddish brown tip; stigmas 3 (g).

HABITAT - in wet soil or shallow water by margins of streams, lakes and ponds; **usually on organic substrates.**



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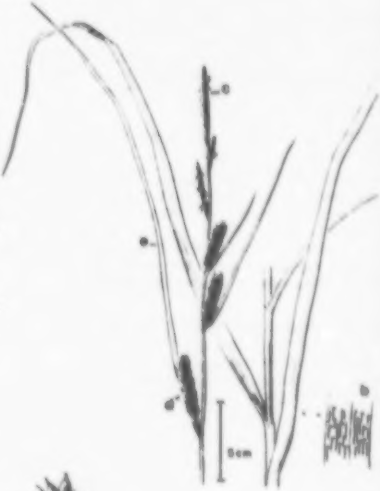

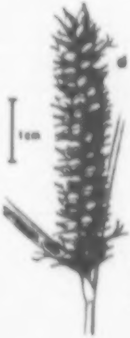

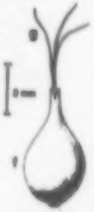

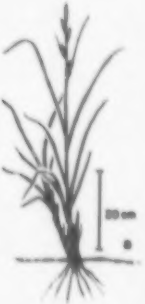

Eriophorum angustifolium
(Narrow-leaved cottongrass)

SEDGE - extensively colonial from creeping rhizomes; stems 2-6 dm tall.

LEAVES - basal and on stem; blade 2-6 mm wide, flat, becoming narrow and triangular or channelled toward tip; upper-most culm leaf equalling or exceeding sheath.

FLOWERS - spikelets 2-8 per inflorescence where stems of spikelets arise from a common point; bristles numerous, white or nearly so; several unequal bracts beneath inflorescence, 2 or more of the bracts leafy in texture, longest one surpassing inflorescence.

FRUIT - achene blackish, 2-3 times long as wide.

HABITAT - cold swamps and bogs at moderate to high elevations in mountains.

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Equisetum arvense (Common horsetail)

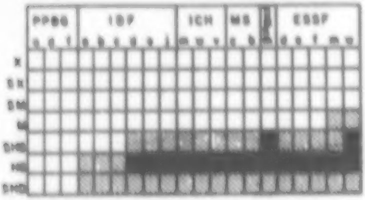
HORSETAIL - extensively creeping and branched, dark-felted, tuber-bearing rhizome; fertile and sterile stems not alike, annual, erect.

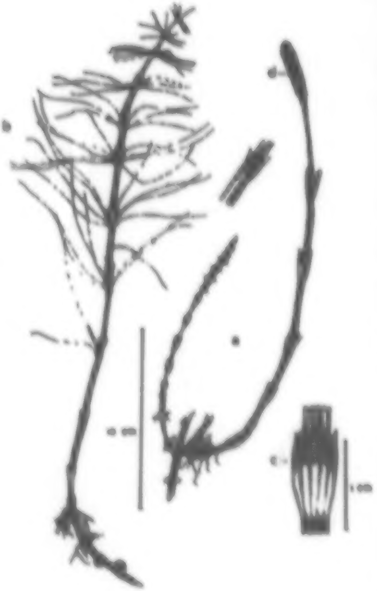
FERTILE STEMS - (a) usually thick and succulent, brownish to whitish, unbranched, soon withering; sheaths with 8-12 large, brown, pointed teeth.

STERILE STEMS - (b) green, solitary or clustered, slender, much branched, usually with 10-12 ridges; sheaths with about 12 sharp lance-shaped brownish teeth, branch sheath (c) closest to the stem are large and and obvious, while others are slightly flaring, somewhat appressed, and 4-6 toothed; branches numerous in dense, regular whorls, ascending or spreading, mostly unbranched, 3-4 angled; central cavity present.

CONES - (d) long stalked, blunt-tipped.

HABITAT - very tolerant of soil conditions, often weedy; moist woods, meadows, banks, roadsides and railway embankments.





Equisetum scirpoides
(Dwarf scouring-rush)

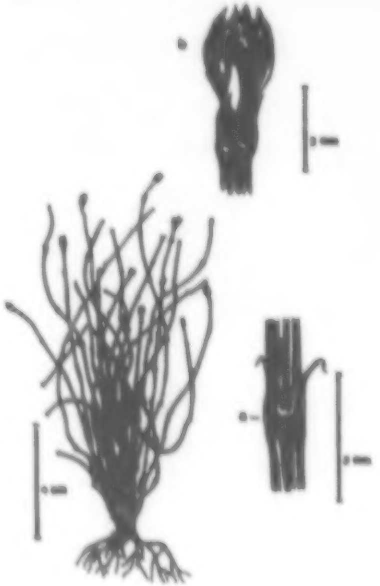
SCOURING RUSH - from a creeping, shallow thread-like rhizome widely branched.

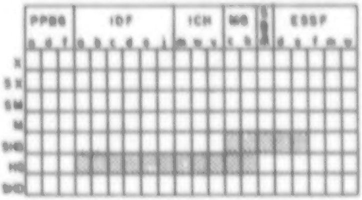
STEMS - all alike, evergreen, small and slender, without central cavity.

SHEATHS - (a) enlarged and darkened upwards, short, with broad, black band above green base; teeth 3, thin, usually with thin transparent margins and a darker middle band.

CONES - (b) black, sharp-pointed, nearly stalkless, small.

HABITAT - open springy banks, damp coniferous woods, thickets and often in swampy places.





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Equisetum sylvaticum (Wood horsetail)

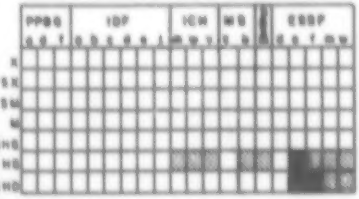
HORSETAIL - with a creeping rhizome, deep in ground; fertile and sterile stems not alike; annual, erect.

FERTILE STEMS - (a) shorter, green to flesh-coloured initially without branches but later producing whorls of green, compound branches; commonly with longer sheaths and teeth than sterile stems.

STERILE STEMS - (b) green, mostly solitary, 10-18 ridged; sheaths green at base, chestnut-brown above, teeth (c) persistent and irregularly coherent into 3-5 broad, brown lobes; branches numerous, regularly whorled, drooping at the ends, mostly compound branched, central cavity present.

CONES - (d) blunt-tipped, long stalked, soon withering.

HABITAT



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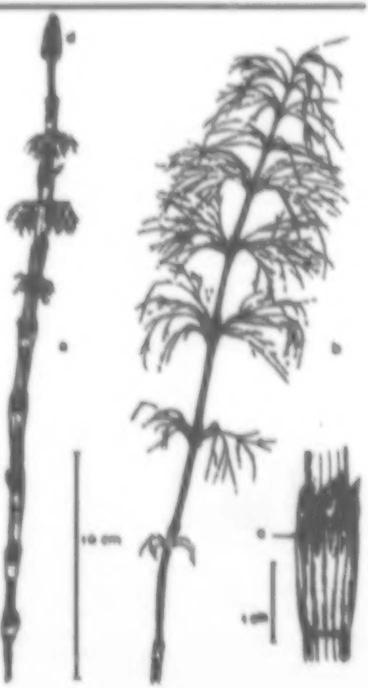


Astragalus collinus (Hill milk-vetch)

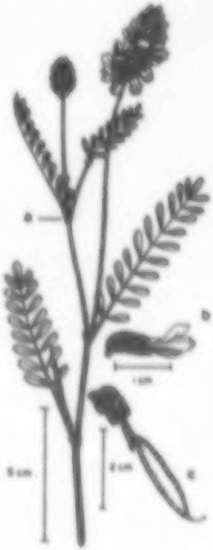
HERB - finely hairy perennial with taproot and several spreading to erect stems, 1-5 dm tall.

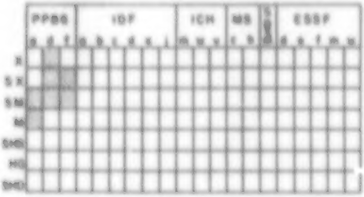
LEAVES - 3-8 cm long with 11-21 linear to oblong leaflets; leaflets 8-20 mm long, 1-4 mm broad, often rounded or notched at apex; stipules (a) linear to oblong, separate.

FLOWERS - elongate raceme of 15-40 creamy-white to yellowish "pea-like" flowers (b) on stalks usually longer than the leaves.

FRUIT - pod (c), pendulous, 7-25 mm long, with long stalk, tapered at both ends.

HABITAT - grasslands and sagebrush plains on sandy and stony soils.





Astragalus miser (Timber milk-vetch)

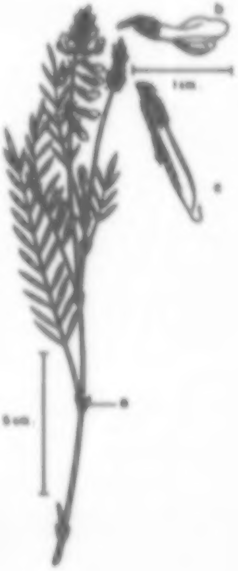
HERB - tufted perennial with woody taproot and very branched woody base, thinly to densely hairy, stems numerous, decumbent or ascending up to 4 dm tall.

LEAVES - less than 20 cm long, with slender petioles, made up of 7-21 leaflets; leaflets are 5-30 mm long, needle-like to broadly oval, the terminal leaflet commonly longer than the adjacent pair; stipules (a) clasping the stem, fused.

FLOWERS - raceme of 2-20 "pea-like" (b), white, yellowish to bluish or lilac flowers.

FRUIT - pod (c) pendulous, up to 2.5 cm long, with short stalk, linear-oblong.

NOTE: Poisonous to livestock.



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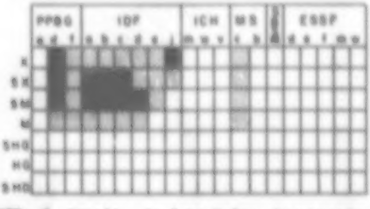


NOTE: *A. canadius* is less hairy, has broader leaflets, white flowers, and more obtuse pods with longer stipes.

Astragalus purshii (Pursh's milk-vetch)

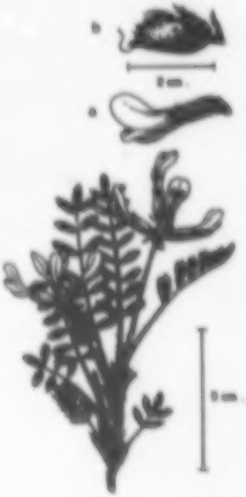
HERB - tufted, **greyish woolly** perennial from a taproot and a branched crown; matted; the stems often prostrate, 5-10 cm long.

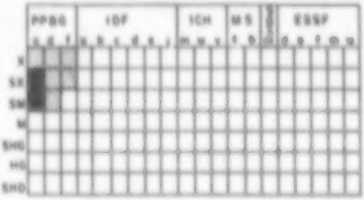
LEAVES - 2-15 cm long with white hairs, 7-19 leaflets, closely crowded; leaflets are 5-20 mm long, elliptic or oblong to obovate, rounded to acute apex, **woolly**; stipules at base of leaf petiole are separate.

FLOWERS - in racemes of 3-10 flowers, yellow or creamy to deep red-purple, "pea-like" (a) flowers, the keel is shorter than the wings.

FRUIT - pod (b), leathery, **greyish-woolly**, flattened.

HABITAT -





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NOTE: Similar to *Oxytropis campestris* but flowering stems of *A. purshii* are leafy.

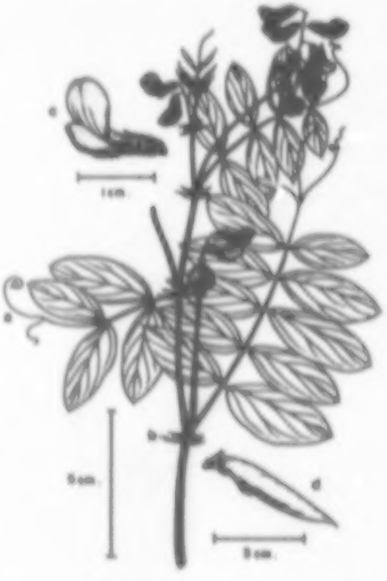
Lathyrus nevadensis
(Nuttall's pea, Purple pea,
Purple Nevada peavine)

HERB - perennial with creeping rootstock and erect to clambering angled stems, 1.5-8 dm tall.

LEAVES - with 4-10 leaflets, 2-12 cm long, hairy on under surface, **veins branched**, **tendrils (a) present**; **stipules** (b) **narrow**, linear to lance-shaped.

FLOWERS - (c) in 2-7 flowered racemes, **bluish purple to mauve-red**.

FRUIT - a hairless pod (d).



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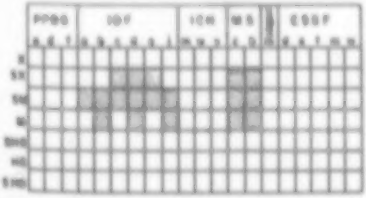

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NOTE: Compare with *Lathyrus ochroleucus* and *Vicia americana*.

Lathyrus ochroleucus
(Cream-flowered peavine)

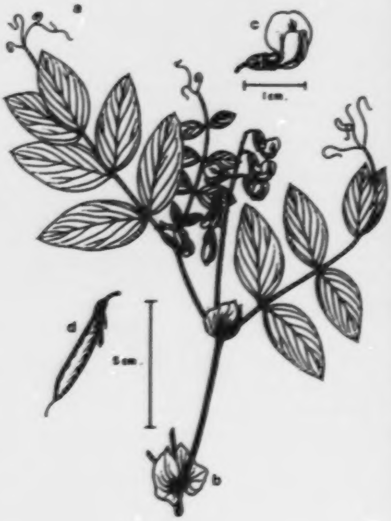
HERB - perennial with rootstock and more or less angled stems; 3-8 dm tall.

LEAVES - with mostly 6 leaflets to 7 cm long, without hairs, **veins branched, tendrils (a) present; stipules (b) broad, oval shaped.**

FLOWERS - in racemes of 6-15 "pea-like" (c) flowers, **white to yellowish white.**

FRUIT - a hairless pod (d).

HABITAT - a typically interior species with a similar habitat, but less cover than *L. nevadensis*.



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NOTE: Compare with *Vicia americana.*

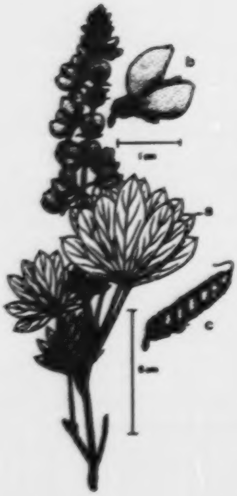
Lupinus arcticus (Arctic lupine)

HERB - perennial with several stems arising from a branched rootstock; stems to 6 dm tall, slender, hollow, long-hairy.

LEAVES - mostly arising from near the rootstock; 6-8 leaflets with sharp, pointed tips (a), **hairy on under surface,** variable on the upper surface; longest petioles mostly basal.

FLOWERS - (b) several, **bluish,** in a elongated cluster; typical legume flower.

FRUIT - pods (c) about 4 cm long, hairy.



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Lupinus sericeus (Silky lupine)

ERB - perennial with branching woody base, to several stems up to 6 dm tall, very ilky hairy, silvery.

EAVES - basal leaves and stem leaves re present when plant is flowering; 5-9 eaflets per leaf, the longest leaflet cm, oblanceolate, sharp tip, **silky airy on both sides**; lower petioles are s much as 3 times as long as the longest eaflet.

LOWERS - (a) several, lavender blue yellowish or whitish), in an elongated luster.

RUIT - pods (b) about 3 cm long, very ilky hairy.

ABITAT - open sites.

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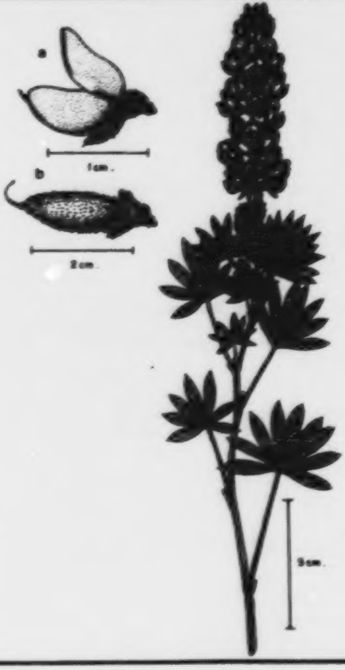

Oxytropis campestris (Field locoweed)

ERB - tufted perennial, 5-30 cm tall, ariable in hairiness.

EAVES - 7 tc numerous leaflets, cattered, opposite, sometimes in pairs.

LOWERS - flowering stems decumbent to rect, **not leafy** (a), usually less than 0 cm long; racemes 5-30 flowered, head- haped to oblong; flowers (b) white to ellowish, sometimes with a purple keel.

RUIT - pod (c) 1-2.5 cm long, sessile.

ABITAT

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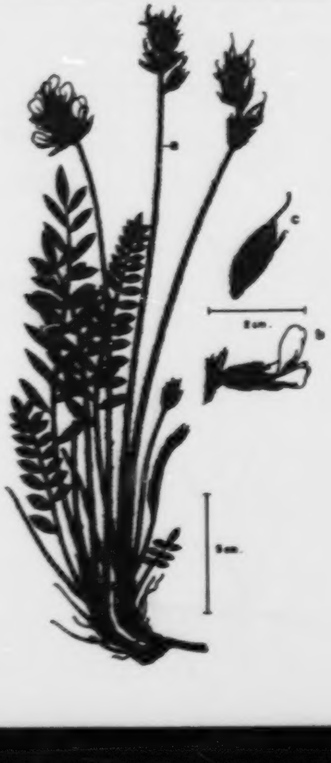
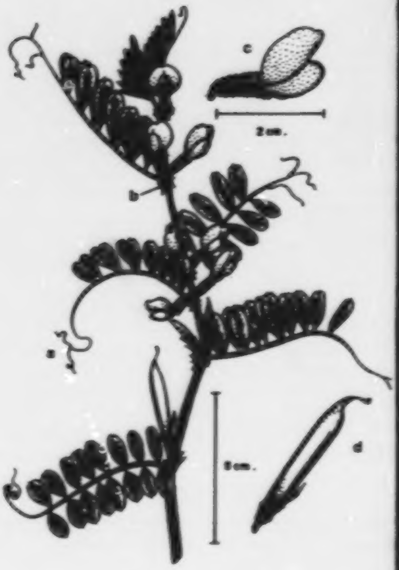


Vicia americana (American vetch)



HERB - perennial, trailing or climbing, naked to hairy stems 1.5-8 dm tall.

LEAVES - simple or branched tendrils (a); with 8-18 leaflets, leaflets to 3.5 cm long, **veins not branched, stipules** jagged (b).

FLOWERS - in loose raceme of 3-9 "pea-like" flowers (c), **bluish purple to reddish purple.**

FRUIT - hairless pod (d).

HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
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Juncus drummondii (Drummond's rush)

RUSH - tufted perennial with numerous cylindrical flowering stems, forming small mats.

LEAVES - all basal, reduced to sheaths 2-6 cm long, or with short bristle-like blades.

FLOWERS - inflorescence lateral,commonly surpassed by a cylindrical bract (a); flowers (b) are borne singly, 1-3 per inflorescence.

FRUIT - capsule with many seeds.

HABITAT - alpine to subalpine meadows, streambanks, talus slopes and ridges.

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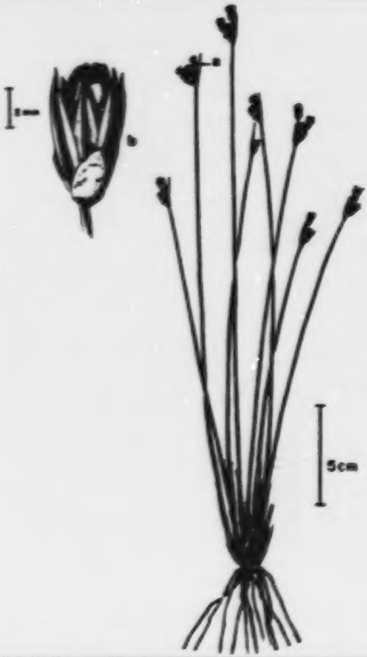


Luzula hitchcockii (Smooth woodrush)

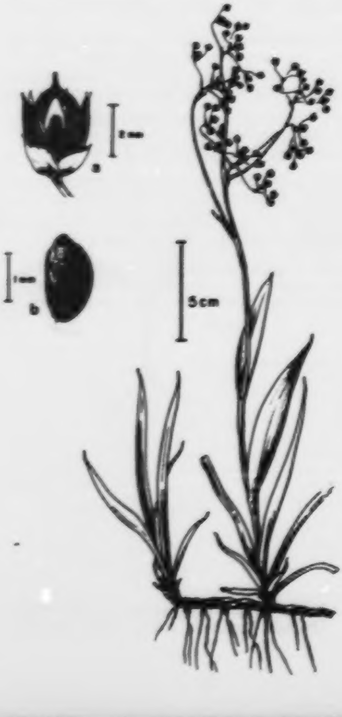
RUSH - rhizomatous perennial, 2-5 dm tall.

LEAVES - basal leaves more or less erect; leaves of flowering culm short, rather wide, "succulent" and erect.

FLOWERS - a nodding to rather erect, loose panicle, with reddish brown flowers (a) borne singly; bracts brownish, strongly lacerate, anthers are longer than the filaments.

FRUIT - reddish brown capsule, with three seeds (b).

HABITAT - common alpine and subalpine parkland species.



NOTE: *L. parviflora* is more tufted, has longer leaves, is more lax, has green-yellow to brown flowers and is found at lower elevations.

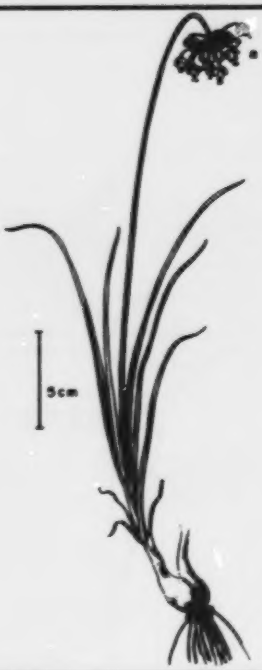
Allium cernuum (Nodding onion)

LILY - slender stem, somewhat angled, up to 5 dm tall; bulb (onion) with scaly outer coat and typical onion odour; bulb and young greens edible.

LEAVES - linear, flattened towards the apex, channelled below, often keeled (central rib projects), shorter than flowering stalk.

FLOWERS - many flowered umbel (a), nodding, pink or white, flowers bell-shaped.

FRUIT - 3-lobed capsule.



HABITAT

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NOTE: Compare with *Zigadenus* spp.

Asparagus officinalis (Garden asparagus)

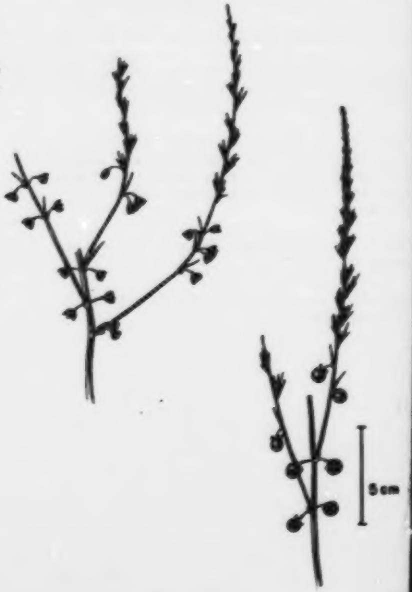
LILY - new stems fleshy and simple (edible part), ultimately branching freely; 1.0-1.5 m tall with green thread-like branches; rhizomes are cord-like and freely branched.

LEAVES - scales, on new stems to 5 mm long, on older plants 1-2 mm long; inconspicuous except on main stem.

FLOWERS - greenish-white, bell-shaped, solitary, drooping on slender jointed pedicel.

FRUIT - red berries, 6-8 mm thick.

HABITAT - grown commercially, escapes along fences, in orchards and along river banks, grows better in open sandy places.



NOTE: Found in wet ecosystems in the PPBGc (Nelson Region); young stems edible.

Calochortus macrocarpus
(Sagebrush mariposa lily)

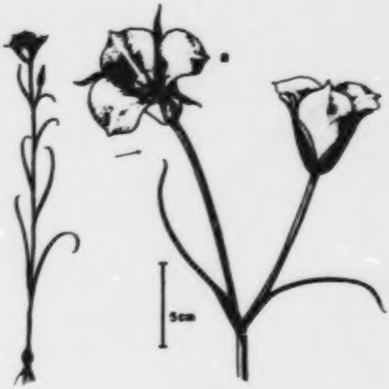
LILY - erect, tall, unbranched stems arising from a round starchy bulb; bulbs can be eaten raw or cooked.

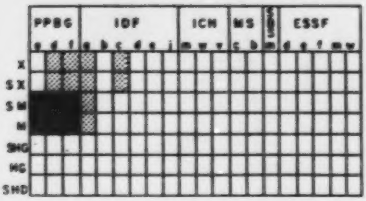
LEAVES - few to several, thick and grass-like; in spring often see only one leaf.

FLOWERS - 1-3 large pale to dark lavender; have 3 greenish-striped petals (a), and 3 narrow sepals longer than the petals.

FRUIT - straw-coloured seeds.

HABITAT - dry hills





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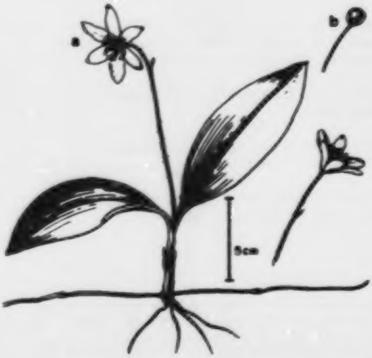
Clintonia uniflora
(Queen's cup, Blue-bead clintonia)

LILY - perennial herb, widely rhizomatous.

LEAVES - 2-3 basal oblong or elliptic, slightly fleshy, noticeably hairy margin.

FLOWERS - solitary (rarely 2), white (a).

FRUIT - lone bright metallic blue berry (b); not edible.



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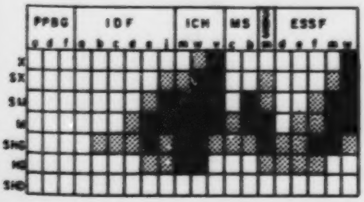

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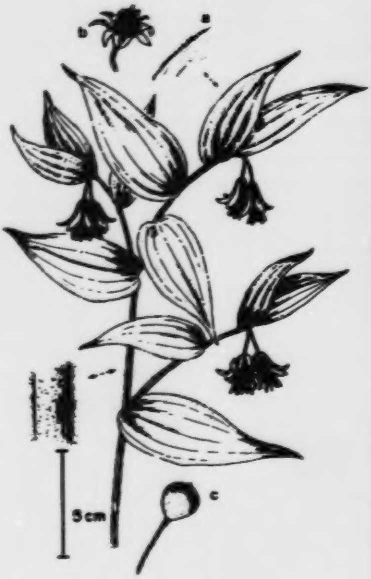
Disporum hookeri (Hooker's fairybells)



LILY - rhizomatous perennial herb with stems sparingly branched.

LEAVES - oval-elliptic, hairy beneath, slightly so above, **marginal cilia pointing forward** (a).

FLOWERS - 2-3 per branch, narrowly bell-shaped (b), creamy white.

FRUIT - **red berry** (c), smooth to slightly hairy, 4-6 seeded.

HABITAT

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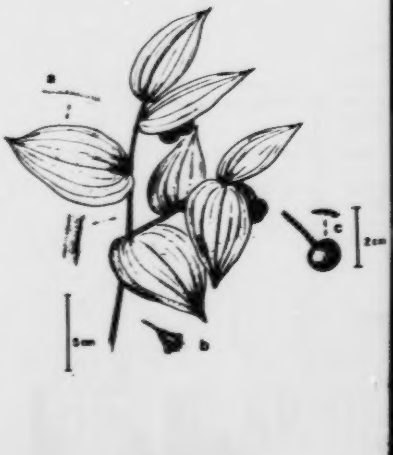
NOTE: Berries are edible but palatability is unknown.

Disporum trachycarpum
(Rough-fruited fairybells)



LILY - similar to *D. hookeri* in appearance; differing in leaf and fruit characteristics.

LEAVES - oval-elliptic, slightly hairy beneath, glabrous above, **marginal cilia spreading** (a) not pointing forward.

FLOWERS - 1-2 narrowly bell-shaped (b), **creamy white.**

FRUIT - **red berry** (c), **with velvet texture,** 6-12 seeded.

HABITAT - found on drier more exposed sites than *D. hookeri.*

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NOTE: Berries are edible but palatability is unknown.

Erythronium grandiflorum
(Yellow glacier lily)

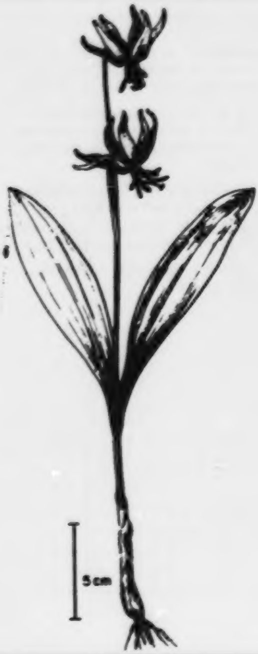
LILY - perennial with slender to stout stems 0.2-1 m tall, growing from a long, slender corm (bulb-like).

LEAVES - 10-20 cm long, oblong-elliptic and acutish at apex, with a narrowly winged petiole.

FLOWERS - usually a single flower; petals lanceolate, acuminate, strongly curved back, yellow.

FRUIT - capsule obovate, 3 cm long, 1 cm broad.

HABITAT - open alpine and subalpine areas, also along avalanche paths to lower elevations.



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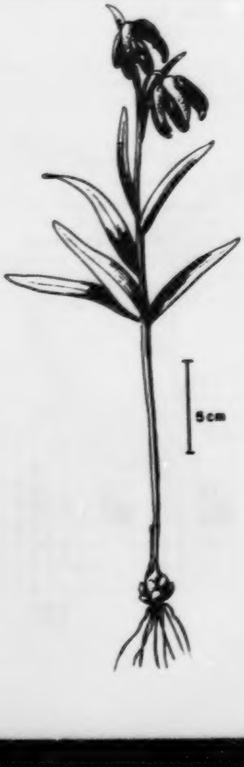
Fritillaria lanceolata (Chocolate lily)

LILY - with slender to stout stems 1.5 - 6 dm tall.

LEAVES - mostly 1 or 2 whorls of 3-5 leaves and scattered upward; leaves linear to commonly lanceolate or ovate-lanceolate, 5-15 cm long, 3-25 mm broad.

FLOWERS - single or from 2-5 on long pedicels, pendent, bell-shaped, purplish, yellow mottled to greenish and purple mottled.

FRUIT - capsule about 2 cm long, broadly winged on the angles.



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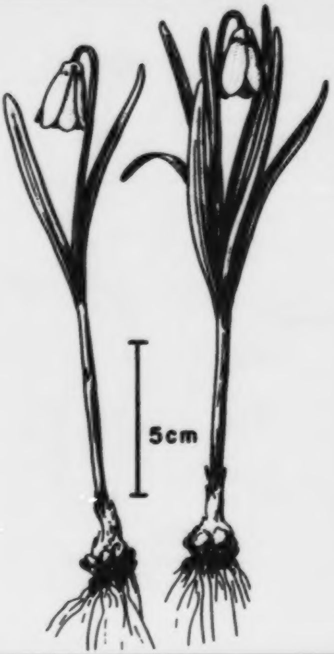
Fritillaria pudica (Yellowbell fritillary)

LILY - perennial with slender to stout stems, 10-30 cm tall; bulb has few large scales and many rice-grain bulblets.

LEAVES - 2 which are subopposite, or more than 2 alternate or semi-whorled; linear to oblanceolate 3-16 cm long, 3-12 mm broad.

FLOWERS - solitary or occasionally 2, pendent, narrowly bell-shaped, yellow often purplish or brownish streaked near the base, fading to red or purple.

FRUIT - capsule, obovate to oblong, 18 mm long, erect.



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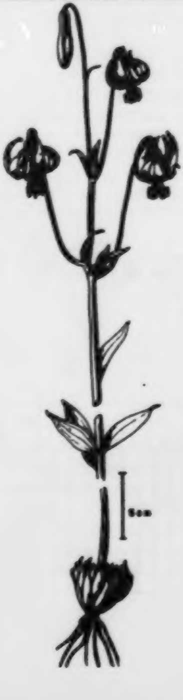
Lilium columbianum
(Tiger lily, Columbia lily)

LILY - sturdy stem 0.6-1.2 m tall, smooth; with a bulb 3-5 cm in diameter, ovoid, with white lanceolate, thick, closely appressed scales.

LEAVES - lanceolate to elliptic, 4-10 cm long, up to 3 cm broad, in whorls of 6-9 or the upper ones scattered.

FLOWERS - 2-20, racemose, some whorled; petals (tepals) 4-6 cm long, 8-12 mm broad, yellow-orange to reddish-orange, spotted with deep red or purple, strongly bent backwards.

FRUIT - cylindric capsule, 3-4 cm long.



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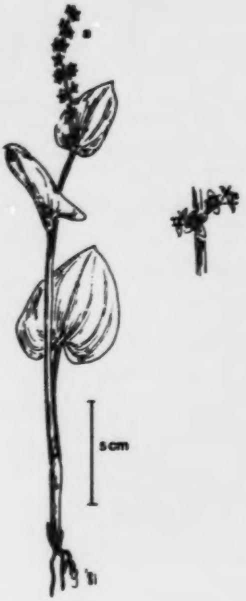
Maianthemum canadense
(Wild lily-of-the-valley, Canadian mayflower)

LILY - low herb, creeping by slender branching rhizomes; stems erect, 5 to 20 cm tall.

LEAVES - 1-3 stem leaves, alternate; leaf blades egg-shaped to lance-shaped, heart-shaped at base; leaves hairy below, with teeth (cilia) along lower edge.

FLOWERS - inflorescence many flowered (a), flower stems closely clustered; perianth segments cream to white becoming bent backwards.

FRUIT - pale red berry; edible.



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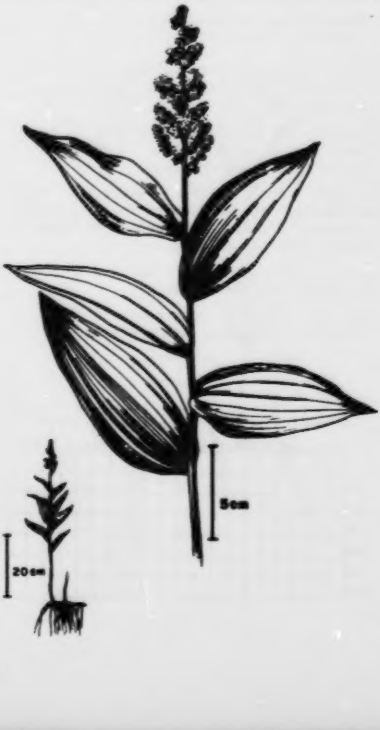
Smilacina racemosa (False Solomon's-seal)

LILY - perennial herb; flowering stem simple, 3-9 dm tall.

LEAVES - alternate, sessile or nearly so with clasping base, finely hairy, oval-oblong.

FLOWERS - numerous, white, in a branched, terminal inflorescence.

FRUIT - reddish berries; edible.



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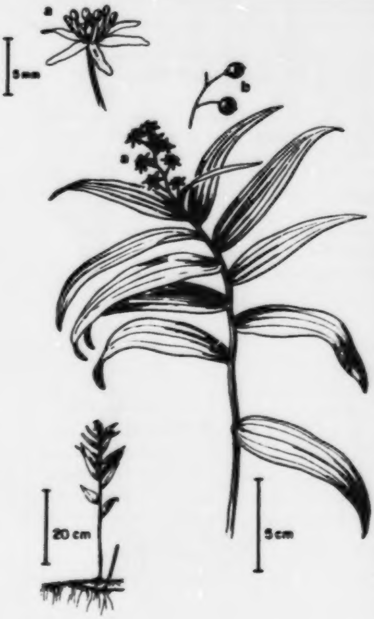
Smilacina stellata
(Star-flowered Solomon's-seal)

LILY - perennial herb; **flowering stem simple**, 2-6 dm tall.

LEAVES - alternate, sessile, narrow oblong-lance-shaped.

FLOWERS - (a) few, creamy white, in an unbranched terminal inflorescence.

FRUIT - berry, **greenish yellow** becoming blackish (b), edible.



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Stenanthium occidentale
(Western mountainbells)

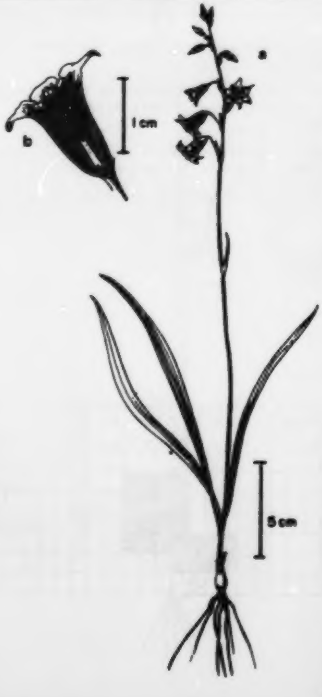
LILY - perennial with smooth slender stem 1-4 dm tall; bulb is ovoid, 1-2 cm long, scaly.

LEAVES - mainly basal, leaves 15-30 cm long, 3-15 mm wide, linear to oblanceolate with a sheathing base.

FLOWERS - erect terminal raceme (a), with **narrow bell-shaped flowers** (b) on slender pedicels, flowers are **greenish or brownish purple** about 14 mm long.

FRUIT - an erect capsule up to 2 cm long including the slender beaks.

HABITAT - greatest occurrence in the Princeton, Keremeos, Ashnola area.



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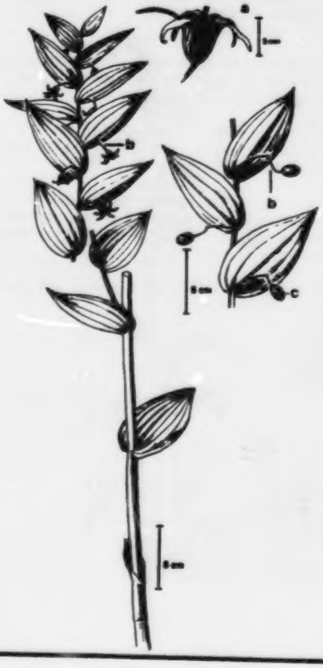
Streptopus amplexifolius
(Cucumberroot twistedstalk)

LILY - perennial herb with stems freely branched, 0.5 - 1 m tall.

LEAVES - oval-oblong, pointed, clasping, marginal teeth not apparent.

FLOWERS - (a) solitary or in pairs, white with greenish tinge, axillary, bell-shaped; flower stem jointed or "twisted" (b).

FRUIT - yellow to red, many seeded, oblong berry (c); inedible.



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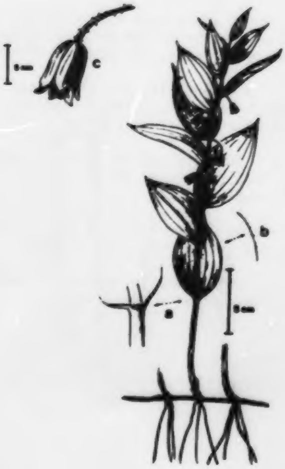
Streptopus roseus
(Simple-stemmed twistedstalk)

LILY - perennial herb with stems mostly unbranched, 15-30 cm tall, sparsely hairy-fringed at the nodes (a).

LEAVES - mostly oval-elliptic, marginal teeth pointing forward (rough to touch) (b).

FLOWERS - solitary, white or greenish yellow to rose, streaked or spotted with reddish purple, axillary, bell-shaped (c); flower stems slender, curved.

FRUIT - red, several seeded, oblong berry; inedible.



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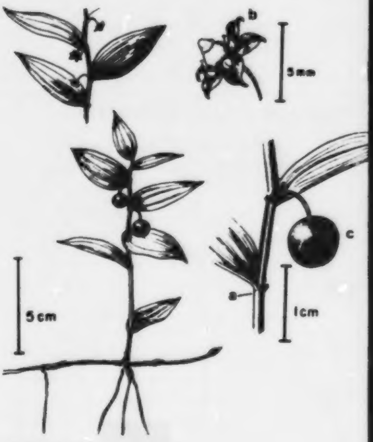
Streptopus streptopoides
(Small twistedstalk)

LILY - perennial herb with stems unbranched, 10-20 cm tall; **coarsely fringed-hairy at nodes opposite leaf blades** (a).

LEAVES - egg-shaped-lance-shaped to oblong-lance-shaped, sharp pointed at tip, marginal teeth not apparent.

FLOWERS - solitary, perianth greenish with a **strong purple tinge, petals curved backwards** (b), spreading and saucer-shaped; flower stem slender.

FRUIT - (c) red few-seeded berry; inedible.



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Triilium ovatum
(Hibberson's western white trillium)

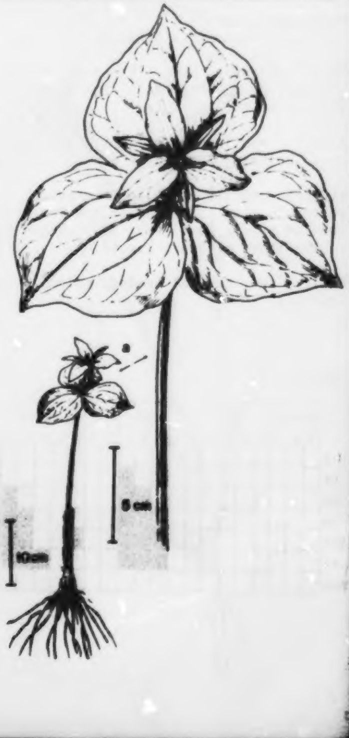
LILY - erect unbranched stem with whorl of leaves just below the terminal flower; rhizome is horizontal or somewhat erect.

LEAVES - 3 essentially sessile leaves arranged in a whorl, triangular ovate, 5-15 cm long and often as broad.

FLOWERS - solitary (a) on an erect pedicel 3-7 cm long; 3 petals, white turning pink to purplish with age.

FRUIT - green berry-like capsule, broadly ovoid, and narrowly winged; inedible.

HABITAT - streambank to open thick woods, often where boggy in early spring.



NOTE: Present in wet ecosystems of Nelson Region's moist subzones; often associated with decaying wood.

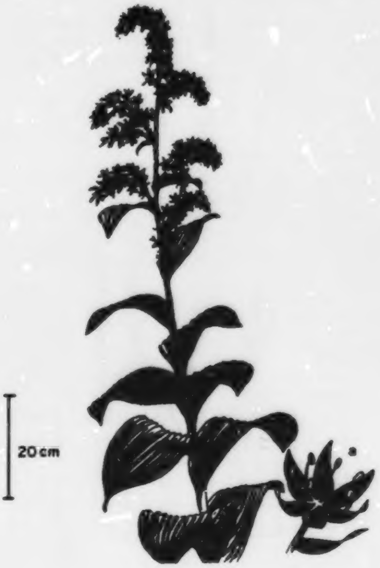
Veratrum viride (Green false hellebore)

LILY - tall perennial with simple stem, 1-2 m tall.

LEAVES - oblong-elliptic, coarsely veined, clasping.

FLOWERS - yellow-green to deep green (a), in thin, branched, drooping spikes.

FRUIT - capsule, oblong to ovoid-shaped, straw-coloured to dark brown.



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NOTE: **Extremely poisonous.**

Xerophyllum tenax (Bear-grass)

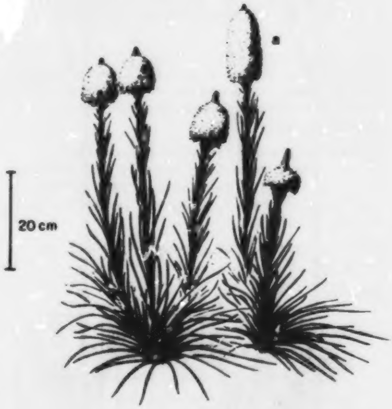
LILY - large, distinctive perennial herb from a short, stout, somewhat horizontal rhizome.

LEAVES - numerous grass-like leaves arising from the base of a leafy stem; flowering stem (to 1.5 m high) is very leafy with leaves becoming reduced upwards; basal leaves 1.5-6 dm long, 6-9 mm broad at base and tapering to a stiff wiry tip with rigid finely toothed margins.

FLOWERS - white, fragrant, in a conspicuous terminal raceme (a).

FRUIT - broadly ovoid capsule, 6 mm long; seeds narrowly oblong,3-4 mm long.

HABITAT - open woods to dry ridges and rocky slopes, found in S.E. B.C. (Salmo-Creston area).



NOTE: Indians used the leaves for weaving.

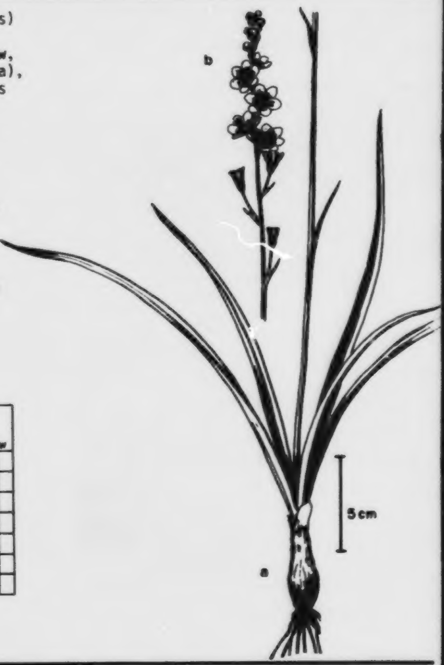
Zigadenus elegans (Elegant death-camas)

LILY - perennial, 1.5-7 dm tall, with few, mostly basal leaves, the bulb is ovoid (a), tapering, up to 3 cm long with membranous scales, without onion odour.

LEAVES - mostly basal, keeled, 5-15 mm wide, the lower leaves up to 3 dm long and distinctly veined, the upper much shorter and grass-like.

FLOWERS - open simple or compound raceme (b), loosely flowered, 6-15 cm long; flowers greenish or yellowish white on pedicels 1-4 cm long.

FRUIT - oblong-ovoid capsule, 1.5-2.0 cm long.



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NOTE: Sheath around bulb breaks up.
Slightly poisonous to stock.
Compare with *Allium cernuum*.

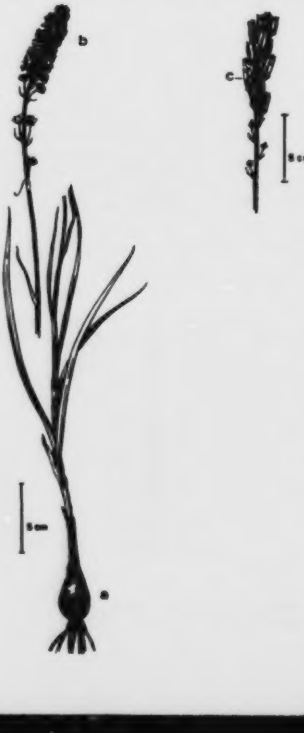
Zigadenus venenosus (Death camas)

LILY - perennial, up to 6 dm tall, with leaves mostly basal; the bulb is ovoid (a), 2-3 cm long with membranous scales, the outer scales being blackish, without onion odour.

LEAVES - mostly basal, keeled, 3-6 mm wide, with finely scabrous margins, lower leaves 1-3 dm long; stem leaves are reduced, often more than two and without the sheathing base.

FLOWERS - a many flowered raceme (b), occasionally more open towards the bottom, to 15 cm long; flowers are creamy-white and smaller than *Z. elegans*, on pedicels 0.5 to 2 cm long.

FRUIT - cylindrical capsule, 1.2-1.5 cm long (c).



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NOTE: Poisonous, especially the bulbs and seeds. Compare with *Allium cernuum*.

Lycopodium annotinum (Stiff club-moss)

HORIZONTAL STEM - trailing on or near surface, prostrate or sometimes arching, elongate, irregularly rooting, leafy; rhizomes shallow.

ERECT STEM - simple or once to twice forked, leafy.

LEAVES - firm, shiny, with a short, **stiff pointed tip** , 8-ranked, tending to be whorl-like, often spreading.

CONE - solitary (a), **stalkless**, borne at the tips of some or all of the erect stems, clearly differentiated from the stem.

HABITAT

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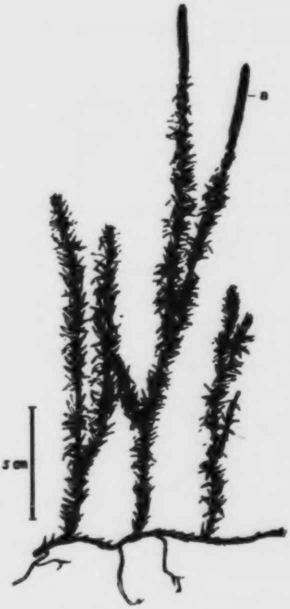


Lycopodium clavatum (Running club-moss)

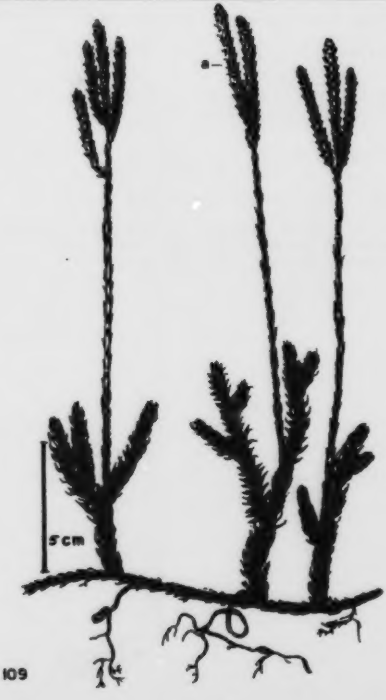
HORIZONTAL STEM - on surface of ground, prostrate or arching, elongate, irregularly rooting, leafy.

ERECT STEM - simple at first, then dichotomously forked, erect.

LEAVES - bright green, **tipped with a soft white bristle**, long and narrow, somewhat lance-shaped.

CONE - (a) one to five on long stalks.

HABITAT - various hygrotopes in moist woods most common in the ICH zone.



Lycopodium complanatum (Ground-cedar)

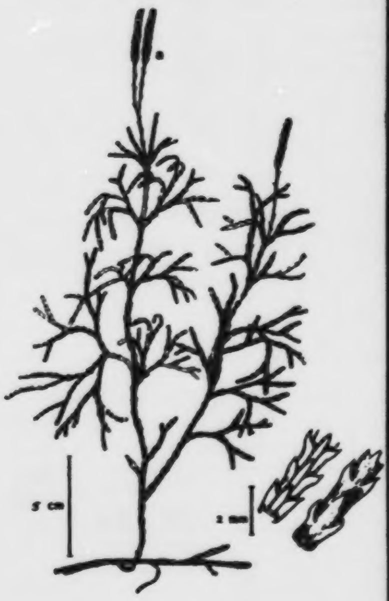
HORIZONTAL STEM - wide creeping, on or near ground surface.

ERECT STEM - much branched, whitish-green, to 35 cm tall, noticeably flattened; **foliage similar to cedar tree.**

LEAVES - the dorsal ones large with an elevated base, the ventral ones needle-like, small (1 mm or less), marginal leaves lance to needle-like.

CONES - **usually more than one on forked stalks** (a).

HABITAT - open woods and rocky hillsides in acid soils; more common in the ICH zone.



Lycopodium obscurum (Ground-pine)

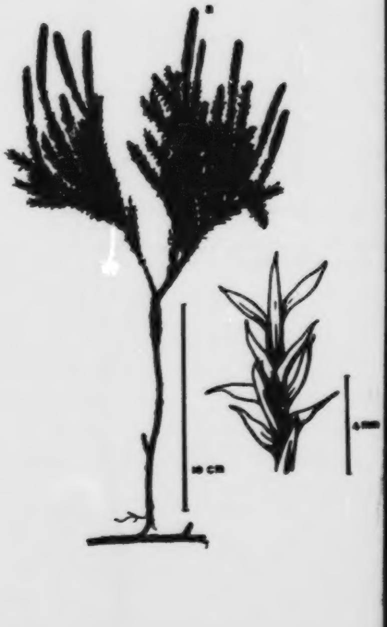
HORIZONTAL STEM - rhizome deep below the ground surface.

ERECT STEM - unbranched near base then numerously, bushy-forked above; "tree-like".

LEAVES - numerous, sharp-pointed 6-ranked.

CONES - (a) solitary, stalkless.

HABITAT - acid soils of clearings, damp woods and bog margins. Less common than *L. annotinum* or *L. clavatum*.



Calypso bulbosa (Fairyslipper)

ORCHID - herb, 5-20 cm tall; **corm** (a) **egg-shaped.**

LEAVES - **single leaf produced at top of corm in fall** and persistent through winter, withering in summer; broadly egg-shaped, mostly 3-5 cm long; **pleated.**

FLOWERS - single; sepals and 2 petals alike, **magenta with 3 deeper coloured veins**; lip hanging downward, somewhat longer than perianth segments, whitish to yellowish-purple or reddish-purple, variously spotted on flanged appendage and streaked inside sac with brownish purple.

HABITAT - widespread throughout B.C.

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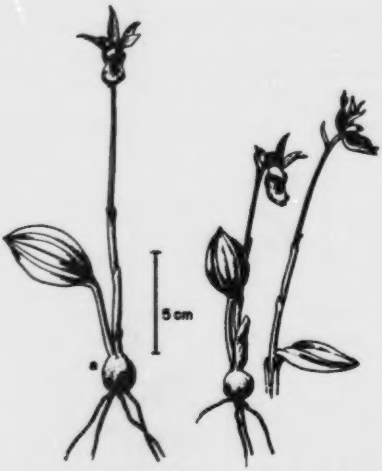

Corallorhiza maculata (Spotted coralroot)

ORCHID - perennial, **saprophytic** herb, 20-40 cm tall; **with coral-like roots**; purplish to reddish-brown or often light yellow stems.

LEAVES - (a) thin, semi-transparent sheaths.

FLOWERS - (b) 10-30, reflexed; sepals reddish-purple, 3-nerved; petals pinkish with **wine-red spots**; lip white and spotted.

HABITAT

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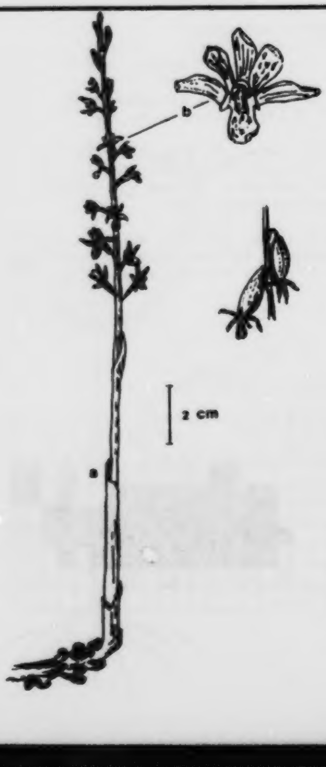

Corallorhiza striata (Striped coralroot)

ORCHID - perennial, **saprophytic** herb, 1.5 - 4.0 dm tall; **with coral-like roots**; stems are purplish-tinged, stout.

LEAVES - (a) thin, semi-transparent sheath.

FLOWERS - (b) 7-30, pink to yellowish pink with 3 reddish brown to **purplish stripes** on the sepals.

HABITAT - in deep coniferous to deciduous forests.

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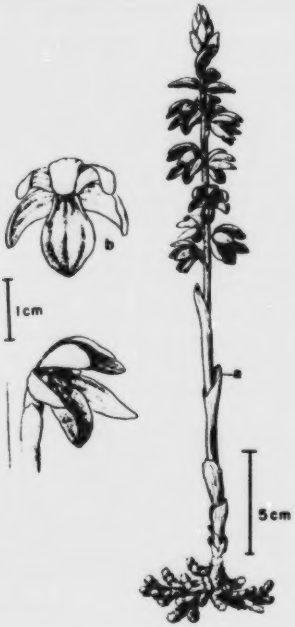

Goodyera oblongifolia
(Western rattlesnake plantain,
Large-leaved rattlesnake orchid)

ORCHID - perennial, evergreen herb, 2.5-4 dm tall, glandular-hairy.

LEAVES - **basal, in a rosette** (a), oval-lance-shaped, 3-7 cm long, thick, dark green, **mottled or striped with white, especially along midrib.**

FLOWERS - many dull (b), white to greenish in elongated inflorescence (c), with most of the flowers oriented to one side.

HABITAT

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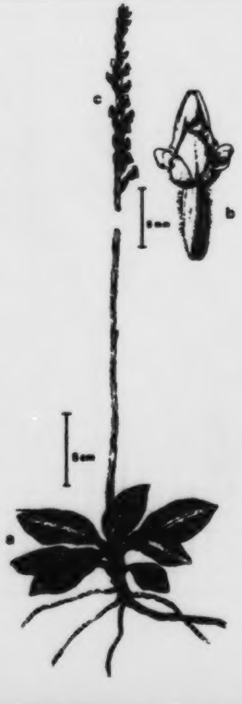
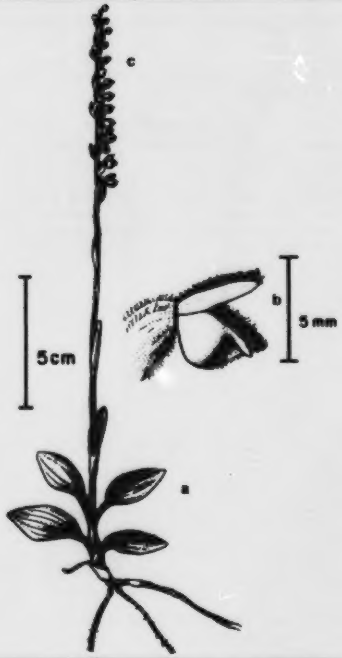


Goodyera repens
(Northern rattlesnake plantain,
Dwarf rattlesnake orchid)

ORCHID - perennial evergreen herb, 10-15 cm tall, generally less robust than *G. oblongifolia*.

LEAVES - mostly basal (a), oval-lance-shaped, 1.5-3 cm long, dark green, **midrib not white**.

FLOWERS - white or pale greenish (b), in elongated inflorescence (c) with all the flowers oriented to one side.



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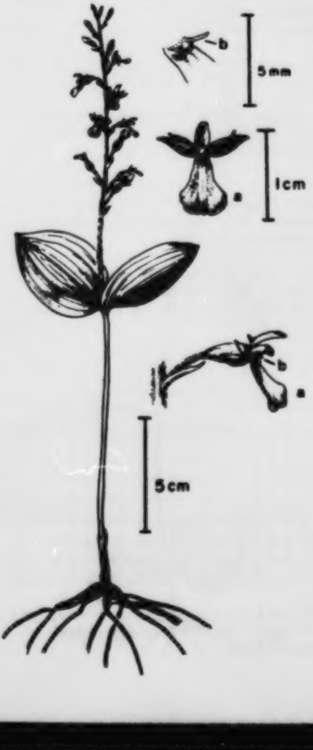
Listera caurina (Northwestern twayblade)

ORCHID - herb, 10-15 cm tall; stem smooth below leaves but strongly glandular-hairy above.

LEAVES - 2, almost opposite, lance-shaped to egg-shaped circular, **well above mid-length of stem.**

FLOWERS - inflorescence 5-25 flowered, open bracts conspicuous; **yellowish green**; lip (a) sessile, not ciliate in the margin, **with a slender tooth on each side at the base** (b).



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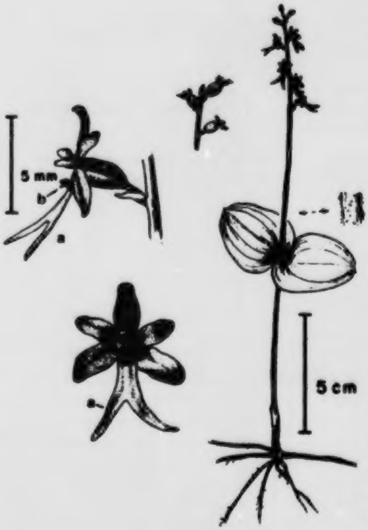
NOTE: *L. borealis* has shallowly bilobed, hairy lip without teeth; *L. convallarioides* has a notched hairless lip with auriculate basal teeth.

Listera cordata (Heart-leaved twayblade)

ORCHID - small inconspicuous herb, 6-20 cm tall, stem glabrous or glandular - hairy above leaves.

LEAVES - 2, broad **heart-shaped**, sessile, opposite, **near mid-length of stem.**

FLOWERS - inflorescence elongated 5-16 flowered; **pale green to purplish green;** lip cleft into 2 (a) linear lance-shaped lobes, and armed at base with a pair of hook-like teeth (b).



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NOTE: Most common *Listera* species in our region.

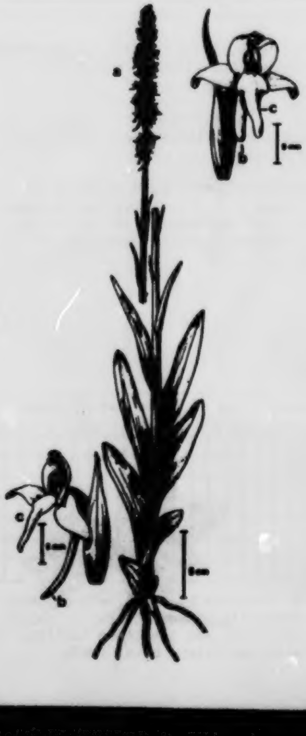
Platanthera dilatata
(Fragrant white rein orchid)

ORCHID - perennial herb, slightly swollen at the base, 0.15 - 1 m tall.

LEAVES - **stem leafy throughout,** leaves gradually reduced upwards, sheathing, oblong to broadly lance-shaped.

FLOWERS - 5-30 in an elongated inflorescence (a), very **fragrant,** white to greenish tinged; **spur slender** (b), **cylindrical, curved, longer than lip** (c).

HABITAT - wet, often boggy ground; widespread throughout the province, more common on the coast than in the interior.



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NOTE: *P. stricta* has greenish flowers and the spur is shorter, stout and bag-shaped.

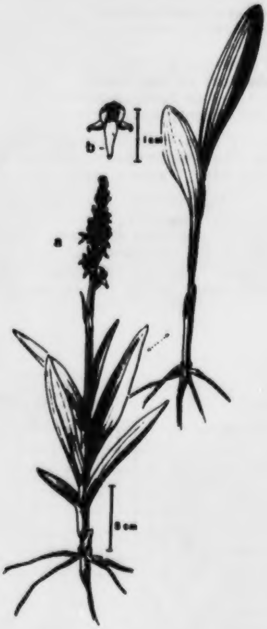
Platanthera hyperborea
(Green-flowered rein orchid)

ORCHID - perennial herb, 0.2-1.0 m tall, with **tuberous, thickened roots.**

LEAVES - several, mostly on lower half of stem, narrowly oblong-elliptic to lance-shaped.

FLOWERS - **densely flowered** elongate inflorescence (a); lower floral bracts are longer than flowers, upper bracts are shorter; flowers are sessile, **pale to deep greenish, often purplish tinged or veined; spur cylindrical;** lip elliptic to **lance-shaped** (b).

HABITAT - **moist** to usually boggy places, sometimes on soil of calcareous origin; tolerant of deep shade.



Platanthera orbiculata
(Large round-leaved rein orchid)

ORCHID - perennial herb, 2-6 dm tall.

LEAVES - **usually 2**, basal, opposite, **lying on the ground**, fleshy, round oblong-elliptic; commonly found without flowering stem.

FLOWERS - 5-25 pale to deep greenish white, in a loose elongated inflorescence (a); **spur** (b) **elongated, tapering at the tip;** lip (c) **straight not concave.**

HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
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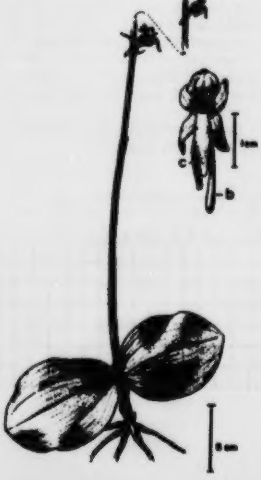
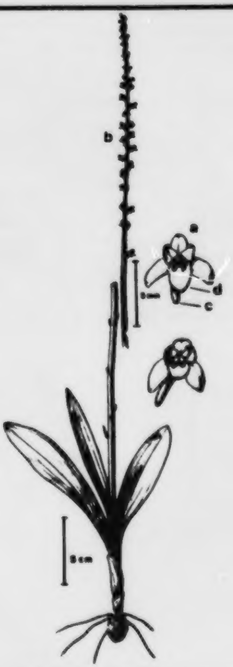


Platanthera unalascensis
(Alaska rein orchid)

ORCHID - perennial herb, 2-6 dm tall, with 1-3 **spherical to egg-shaped, fleshy tubers**, mostly 1.5-3 cm long; leafless flower stem with inconspicuous bracts.

LEAVES - 2-4 on lower third of stem, **closely clustered or basal, withering at flowering time**, lance-shaped, base of leaves sheathing.

FLOWERS - (a) **numerous**, spirally arranged (b), subsessile, very **fragrant**; sepals are pale green, petals greenish to nearly white, sometimes purplish tinged; **spur** (c) about **equal** to lip (d) **in length**.



HABITAT

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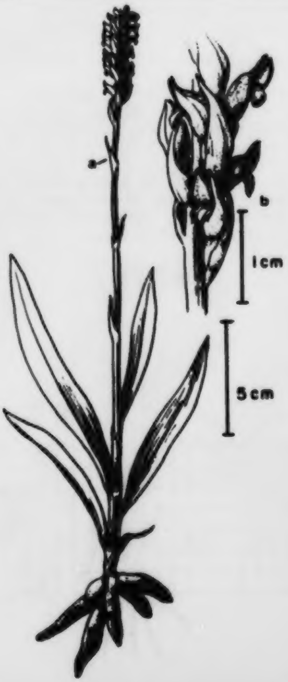
Spiranthes romanzoffiana
(Hooded ladies' tresses)

ORCHID - perennial, mostly 1-6 dm tall, roots clustered, enlarged, fleshy.

LEAVES - several near base of stem, linear to narrowly oblong, 8-20 cm long, abruptly transitional upward to short, sheathing, lance-shaped bracts (a).

FLOWERS - elongate inflorescence crowded; flowers white or cream to greenish white, tubular, **aligned in 1-4 spiralling vertical rows** (b); floral bracts whitish or pale green; flowers sweet-scented; petals form a hood over the united stamens.

HABITAT - bogs, marshes, wet meadows, open woods and open pastures.



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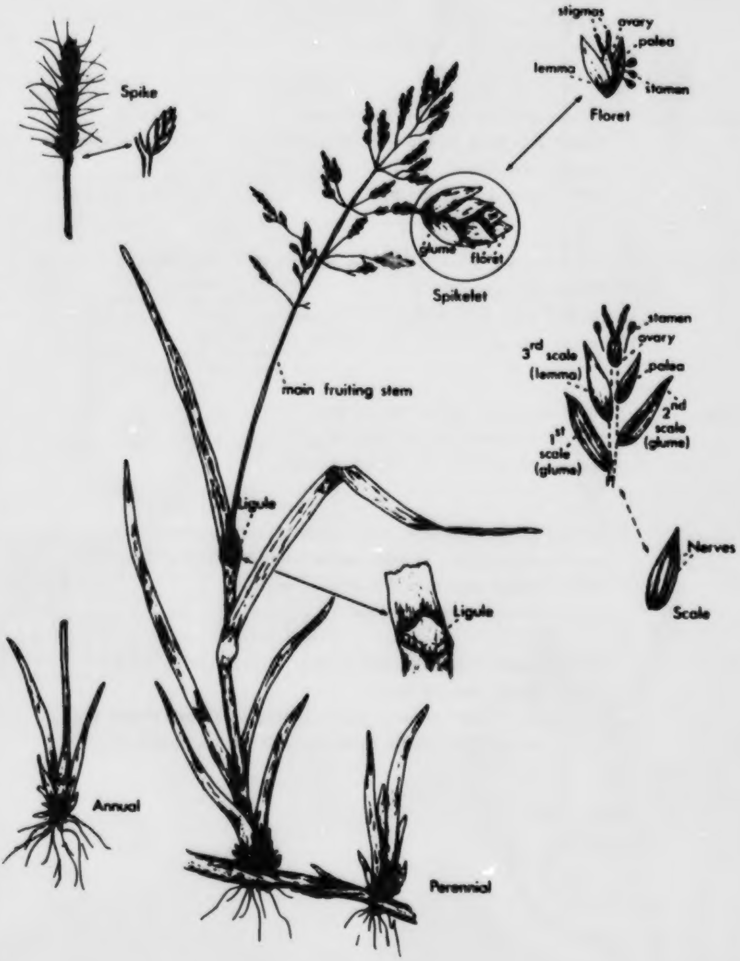
Illustrated Grass Characteristics


Spike
stigmas
ovary
palea
lemma
stamen
Floret
glume
floret
Spikelet
stamen
ovary
3rd scale (lemma)
palea
2nd scale (glume)
1st scale (glume)
main fruiting stem
Ligule
Ligule
Nerves
Scale
Annual
Perennial

CHARACTERISTICS OF SOME COMMON GRASS GENERA

Grasses are important plants, but are rather difficult to identify. In order that some of the common grass species can be recognized, it is essential to gain at least a rudimentary knowledge of the flower parts and of the main distinguishing features of the different genera. A short list of these distinguishing characteristics is given here.

Agropyron	- inflorescence a **spike**; few to many florets per spikelet. - spikelets are sessile. - claw-like auricles at throat of leaf.
Bromus	- inflorescence a panicle, few to many florets per spikelet. - lemmas **2-toothed** at tip with awn, if present, arising **between the teeth**. - sheaths are **closed**. - leaf blades generally flat.
Calamagrostis	- inflorescence usually a narrow panicle (but drooping with age); **one floret per spikelet**. - florets with **tuft of hair** at the base. - leaves generally flat and drooping.
Elymus	- inflorescence a **spike**; few to many florets per spikelet. - similar to *Agropyron* but sessile spikelets **in pairs**. - pronounced auricles at throat of leaf.
Festuca	- inflorescence a panicle; few to many florets per spikelet. - usually with stiff, slender **awn arising from tip of lemmas**. - sheath around stem **open** for entire length. - mostly narrow inrolled leaves.
Poa	- inflorescence a panicle; few to many florets per spikelet. - **lemmas always lacking awns**. - leaves relatively narrow, usually ending in a **boat-shaped tip**. - sheath around the stem is fused for part of its length.

Agropyron spicatum
(Bluebunch wheat grass)

GRASS - **common "bunch grass"** in bunches up to 0.5 m^2, and may reach over 1 m in height.

SHEATHS - open, their margins overlapping and not commonly hairy.

LEAVES - blue-green, often inrolled tightly, particularly when older, but can be broad and flat, often twisted when older; the stem bases are typically dark brown to black and sometimes reddish.

LIGULES - short and collar-like (a), being hidden in the throat of the leaf; the auricles (b) are **distinct and claw-like.**

INFLORESCENCE - erect, sparsely flowered spike with **one spikelet per node**, the individual spikelets being well removed from each other (never congested like *Agropyron cristatum*); there are several florets per spikelet (c); the glumes are awnless and shorter than the lemma; the lemmas are awned (var. *spicatum* (d)) or often awnless (var. *inerme* (e)).

HABITAT - plains, dry slopes and dry open woods.

	PPBG			IDF						ICH			MS		SBPS	ESSF				
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S X	■	■	■	■	▨	▨	▨	▨					▨			▨	▨			
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M	■	■	■	▨		▨														
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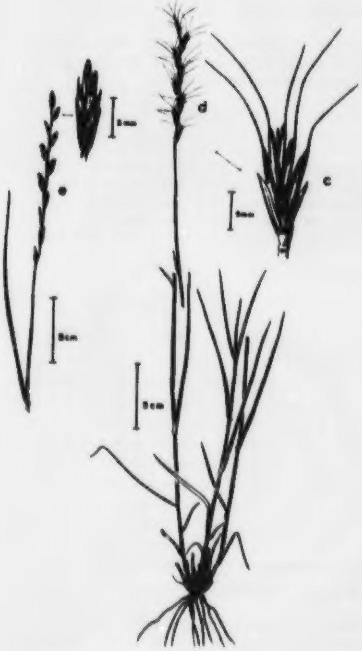

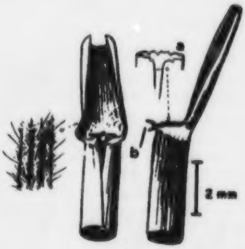

Aristida longiseta (Red threeawn)

GRASS - strongly tufted perennial, 2-4 dm tall.

SHEATHS - rough, hairy at throat.

LEAVES - narrow, stiff and very rough with blade margins rolled in towards upper surface of blade.

LIGULES - (a) very short with hairs 2-3 mm long.

INFLORESCENCE - a simple narrow, erect, few-flowered panicle with ascending branches; glumes are awn-tipped; lemmas have awns (b) 5 to 8 cm long with lateral branches divergent; (looks triple awned).

HABITAT -

	PPBG			IDF						ICH			MS		SBPS	ESSF				
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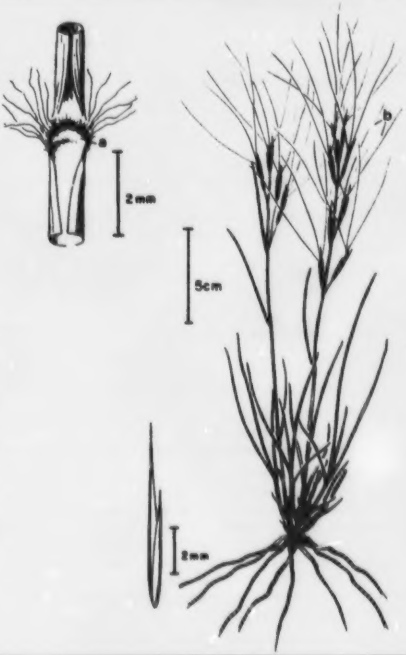

Bromus tectorum (Drooping brome grass)

GRASS - a delicate low weedy annual, imparts a reddish colour to the landscape it 'invades', green when young becoming reddish brown when in flowering stage.

SHEATHS - closed.

LEAVES - wide and covered with hairs.

LIGULES - (a) 1.2-3 mm long, noticeably torn, without auricles.

INFLORESCENCE - large, congested panicle with many large spikelets nodding on slender branches, more than one spikelet per branch and several florets per spikelet; the glumes (b) are awnless and shorter than the lemmas; the lemmas are notched and have wiry awns (c) up to 2 cm long; lemmas are not noticeably hairy.

HABITAT - roadsides and other dry disturbed areas; introduced species.

	PPBG			IDF						ICH			MS		SBPS	ESSF				
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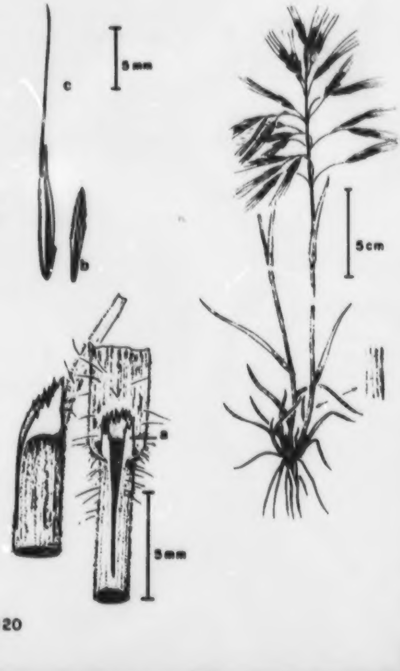


Bromus vulgaris (Columbia brome grass)

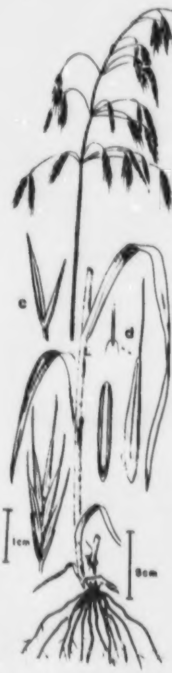
GRASS - a delicate to robust fibrous-rooted perennial, with flowering stems 6-10 dm tall; never forms bunches.

SHEATHS - closed and almost always **distinctly hairy especially at the throat** (a).

LEAVES - long, flat and conspicuously drooping.

LIGULES - (b) long and truncate, no auricles.

INFLORESCENCE - delicate, drooping panicle with few spikelets; usually a single spikelet per panicle branch; several florets per spikelet; glumes (c) are awnless and shorter than the lemmas; lemmas are rounded, notched (d) and may have an awn up to 1 cm long; lemmas are partially hairy.



HABITAT

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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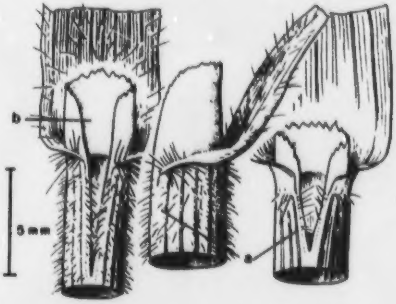
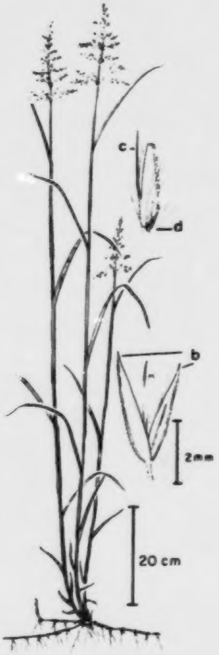
SHD																				

NOTE: *Bromus inermis* is similar but is rhizomatous, has a more erect panicle, has lemmas which are unawned or with an awn-tip 1-2 mm long, and is often found on disturbed sites.





Calamagrostis canadensis
(Bluejoint reed grass)

GRASS - a large robust rhizomatous grass sometimes forming large "tufts"; the flowering stems are usually taller than 1 m; the mature spikelets have a purple-red colour.

SHEATHS - open and never distinctly hairy except at the collar.

LEAVES - long, flat and slightly drooping.

LIGULES - (a) almost 1 cm long (at least on upper stem leaves). There are no true auricles.

INFLORESCENCE - a congested spreading panicle, drooping with age; there are many spikelets per panicle branch, one floret per spikelet; glumes are awnless (b), purple-tinged, longer than the lemma and obscure the floret; lemmas have a delicate short straight awn (c) from the back; the base of the lemma is hidden by long wiry callus hairs (d).

HABITAT - marshes, wet places, open woods and meadows.

	PPBG			IDF						ICH			MS		SBS	ESSF				
	a	d	f	a	b	c	d	e	j	m	w	v	c	b	m	d	e	f	m	w
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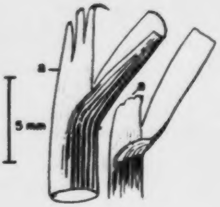

Calamagrostis rubescens (Pine grass)

GRASS - common rhizomatous grass, **rarely encountered in flower**; vegetative height is typically 3-5 dm, the flowering stems can exceed 1 m in height.

SHEATHS - short, open, smooth except for **collars which are hairy** (a).

LEAVES - narrow, flat, long in comparison to sheath, pine-green, drooping.

LIGULES - (b) variable in length; no auricles.

INFLORESCENCE - elongate, erect, congested spike-like panicle, pale colour; many spikelets per branch and one floret per spikelet; glumes are awnless (c), longer than the lemma and obscure the floret; lemmas have a twisted and bent awn (d) attached near the base, the base of the lemma is partially hidden by long wiry callus hairs (e).

HABITAT

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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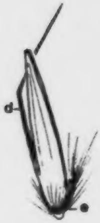
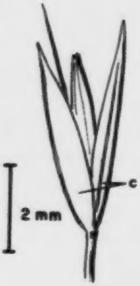
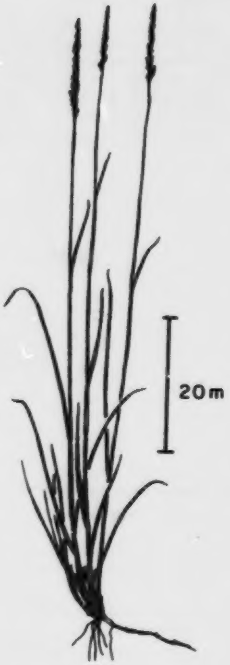
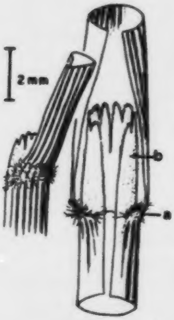








Cinna latifolia (Wood reed grass)

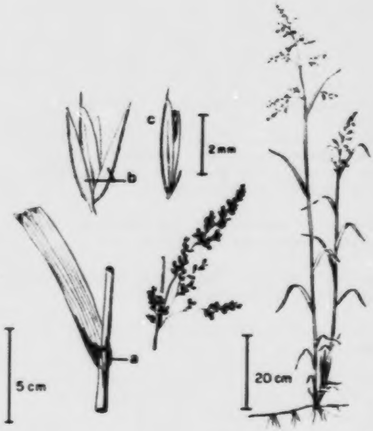
GRASS - sweet-scented rhizomatous perennial, 0.7 - 2 m tall.

LEAVES - blades flat, 7-15 mm wide, deep green, rough to the touch, narrow at the base.

LIGULES - (a) 3-8 mm long, more or less strongly lacerate.

INFLORESCENCE - a loose panicle, 1.5-3 dm long with spreading drooping branches; one floret per spikelet; glumes (b) are slender, the second longer than the first; lemma (c), with a small apical awn, equalling the shorter glume.

HABITAT - moist woods, clearings.



Elymus cinereus (Giant wild rye grass)

GRASS - a 'giant' grass up to 2 m in height forming distinctive greyish-blue tufts.

SHEATHS - open, slightly hairy especially at the nodes.

LEAVES - long and often more than 1.5 cm broad.

LIGULES - (a) moderate length; very pronounced auricles (b).

INFLORESCENCE - robust, erect spike (c), with usually more than 2 spikelets per node (d), many florets per spikelet; glumes are awned, and the same size as the lemmas; lemmas are slightly hairy and have a short awn-like apex.

HABITAT -

	PPBG			IDF						ICH			MS		SBS	ESSF				
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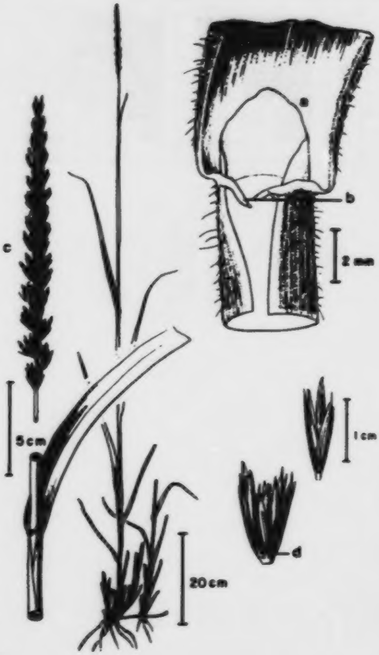

Elymus glaucus (Blue wild rye grass)

GRASS - a delicate, fibrous-rooted perennial with flowering culms 5-7 dm tall but always lax and drooping giving the plant a lower stature; never forms true bunches.

SHEATHS - open with conspicuous hairs.

LEAVES - can be very wide (1 cm) and conspicuously drooping.

LIGULES - (a) short and collar-like, hidden in the throat of the leaf; **auricles (b) are present and conspicuous.**

INFLORESCENCE - nodding, sparsely flowered spike; two spikelets per node of the inflorescence; several florets per spikelet; the glumes are awnless and the same size as the lemmas; the lemmas (c) are frequently awned and never conspicuously hairy; the awns are 1-2 cm long.

HABITAT

	PPBG			IDF						ICH			MS		SBS	ESSF				
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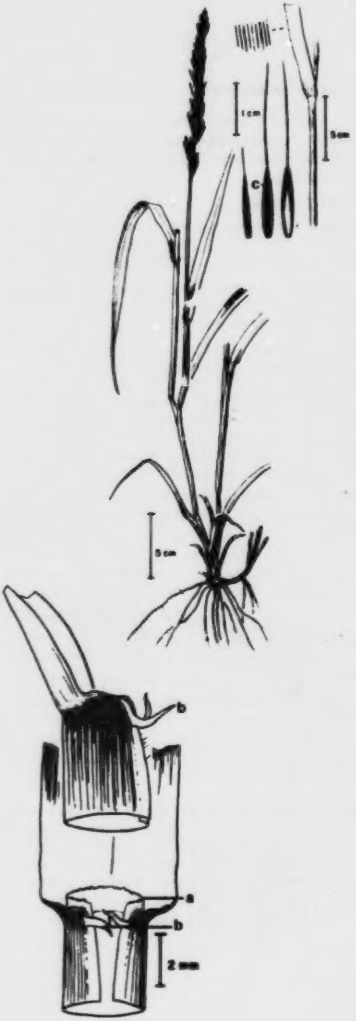
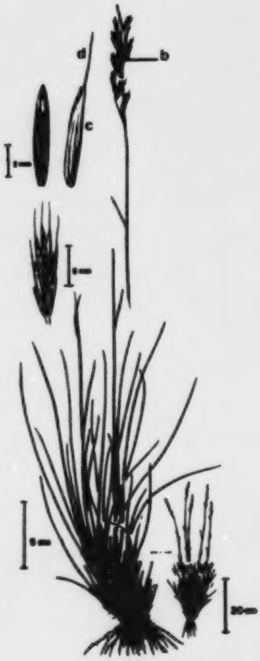
NOTE: *Elymus hirsutus* is very similar to *Elymus glaucus* and is distinguished by the presence of long hairs along the margins of the lemma and the lack of well developed auricles. *Elymus glaucus* can be easily separated from co-occurring, forest grasses *Bromus vulgaris*, *Cinna latifolia* and *Trisetum cernuum* by the presence of auricles and very short collar-like ligules.



Festuca idahoensis (Idaho fescue)



GRASS - a small bunched grass with reddish bases and flowering stems up to 6 dm tall.

SHEATHS - open.

LEAVES - fine and wiry, restricted to the base of the stems, dark green and often with a waxy cover, **slightly scabrous.**

LIGULES - (a) the leaves are so inrolled that the ligules are not obscured by the throat; no true auricles.

INFLORESCENCE - an erect panicle with erect branches, nodding slightly; more than one spikelet (b) per panicle branch; several florets per spikelet; glumes are awnless and slightly shorter than the lemmas; lemmas (c) are awned from the tip; awns (d) are usually more than 2 mm long but less than the length of the lemma.

HABITAT - characteristically a southern species occurring no further north than Chase.

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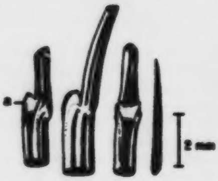
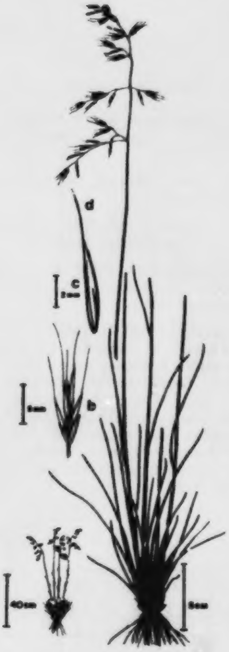


NOTE: This species is often confused with *Festuca saximontana* which is generally smaller and remains green longer; the panicle is generally more erect and spike-like and the spikelets are typically smaller; it has a more northerly distribution.



Festuca occidentalis (Western fescue)

GRASS - a fine wispy grass with flowering culms up to 8 dm long but very lax, forms small tufts.

SHEATHS - open

LEAVES - very long, distinctly inrolled and very lax, not scabrous.

LIGULES - (a) short (like *Festuca idahoensis* and *Festuca saximontana*); no true auricles.

INFLORESCENCE - drooping, spreading panicle; few spikelets per panicle; can be more than one spikelet per panicle branch; several florets per spikelet (b); the glumes are awnless, smaller than lemmas and dissimilar in size; the lemmas (c) have long flexuous awns, (d) equalling the length of the lemma.

HABITAT -

	PPBG			IDF						ICH			MS		SBS	ESSF				
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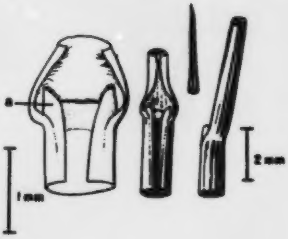

Festuca scabrella (Rough fescue)

GRASS - large bunch grass forming bunches up to 0.8 m^2; flowering stems can reach 1 m high.

SHEATHS - open, **sheaths and culm bases are persistent.**

LEAVES - slightly inrolled, commonly flat and slightly drooping, **scabrous.**

LIGULES - (a) short (same as *Festuca idahoensis, saximontana* and *occidentalis*); no true auricles.

INFLORESCENCE - erect, spike-like when young, however at maturity an erect panicle whose branches nod slightly; panicle is few-flowered, the spikelets commonly occurring singly on the panicle branches, reddish colour, several florets per spikelet (b); glumes (c) are awnless, smaller than the lemmas; lemmas are awnless although sometimes may have an elongated tip.

HABITAT

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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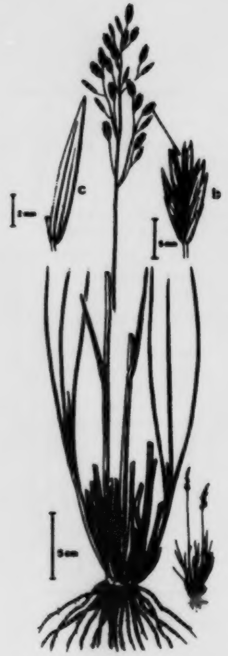
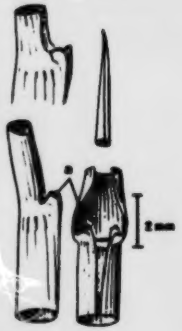




Koeleria macrantha (Prairie koeleria, Junegrass)

GRASS - a small bunched grass; the flowering culms are typically 4-5 dm tall.

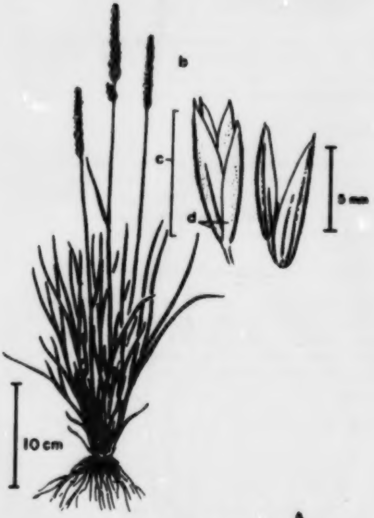
SHEATHS - open, margins not overlapping, the collars are most often hairy pinkish colour when mature.

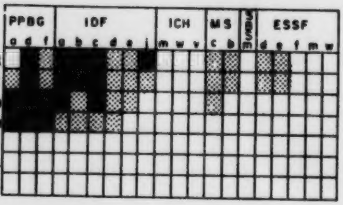
LEAVES - slightly inrolled, and almost always distinctly short-hairy.

LIGULES - (a) short and distinctly hairy; there are no true auricles.

INFLORESCENCE - erect **spike-like panicle** (b), densely congested with many spikelets; the spikelets usually have only two florets (c); the glumes (d) are awnless and the same size as the lemmas; the lemmas are rarely awn-tipped.

HABITAT - grasslands and dry forests - found in most abundance where range is in fair condition.





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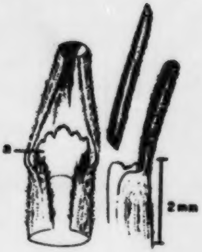

Oryzopsis asperifolia
(Rough-leaved rice grass)

GRASS - a robust perennial grass with erect flowering stems up to 5 dm tall, and erect, slightly drooping leaves taller than the flower stem.

SHEATHS - open.

LEAVES - primarily all basal, flat and broad, slightly drooping towards the apex; the stem leaves immediately below the inflorescence are short, with a blade often less than 2 cm long.

LIGULE - (a) short; no true auricles.

INFLORESCENCE - narrow erect panicle with erect branches; few spikelets; one floret per spikelet (b); glumes (c) are awnless and the same size as the lemma; the lemma may have an awn (d) up to 1 cm long; the awns are deciduous.

HABITAT -

	PPBG			IDF						ICH			MS		SBS	ESSF				
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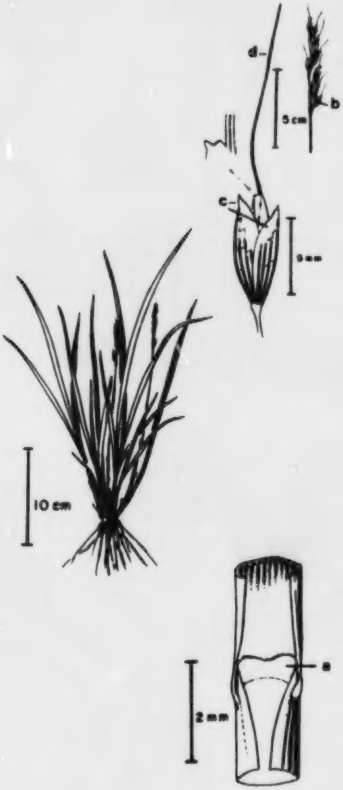
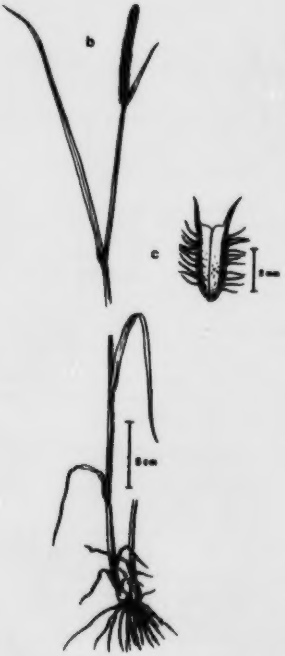
NOTE: Grains can be eaten cooked or made into flour.





Phleum pratense (Common Timothy)

GRASS - a robust perennial with flowering stems up to 1 m in height, the stem bases can be rather bulbous.

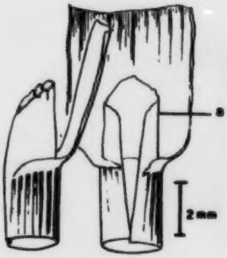
SHEATHS - open.

LEAVES - flat and moderately broad tending to droop slightly.

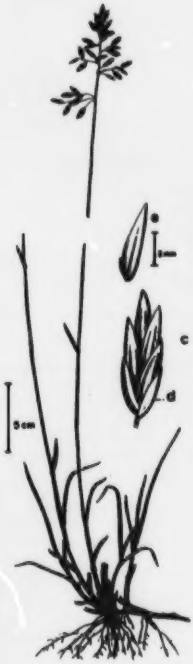
LIGULES - (a) moderately long; auricles may be present.

INFLORESCENCE - a conspicuous cigarello-shaped, greenish, erect spike-like, very congested panicle (b); the spikelets have one floret; the glumes are awned, comb-like (c), longer than the lemma and obscure the floret; the lemma is short and awnless.

HABITAT - along roadsides, in fields and waste places; introduced and commonly used in forest seed mixtures.



NOTE: *Phleum alpinum*, a subalpine parkland and alpine species, is smaller and has a shorter purplish inflorescence. *Alopecurus aequalis*, found at lower elevations on moist disturbances, is smaller and its glumes lack awns and the comb-like cilia. *Setaria viridis*, found in drier waste places, has a reddish inflorescence when mature, the glumes are smaller than the lemma and the spikelets are subtended by barb-like bristles.



Poa nervosa (Wheeler's blue grass)

GRASS - a rhizomatous grass with flowering stems up to 6 dm tall.

SHEATHS - closed and reddish colour.

LEAVES - inrolled and mostly basal with with canoe-shaped tips (a), the upper stem leaf is often reduced.

LIGULES - (b) short, thick and distinctly truncate; no auricles.

INFLORESCENCE - partially spreading, compact, slightly drooping panicle; many florets per spikelet (c), glumes (d) are awnless, smaller than lemmas and have a purplish red colour; lemmas (e) are awnless, keeled, and lack pubescence.

HABITAT - open woods at medium altitudes.

	PPBG			IDF						ICH			MS		SBS	ESSF				
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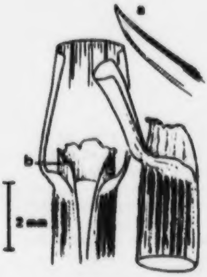
NOTE: Can be confused with *Poa cusickii* which has longer more papery ligules.



Poa pratensis (Kentucky blue grass)

GRASS - common, turf-forming, rhizomatous grass variable in height and producing flowering culms very readily.

SHEATHS - partially closed.

LEAVES - flat and broad with distinct broad canoe-shaped tips (a).

LIGULES - short and truncate (b); no auricles.

INFLORESCENCE - open spreading panicle (more congested when young), taking on a characteristic lop-sided nodding appearance when fruits have matured; panicle has many spikelets on many branches; spikelets have many florets (c); glumes (d) are awnless, have purplish tinge on margins, are shorter than the lemmas; lemmas are awnless and have hairs along the back with dense cobwebby hairs at the base (e); tinged with a purplish colour.

HABITAT - open woods, meadows and open ground (commonly used in lawns).

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
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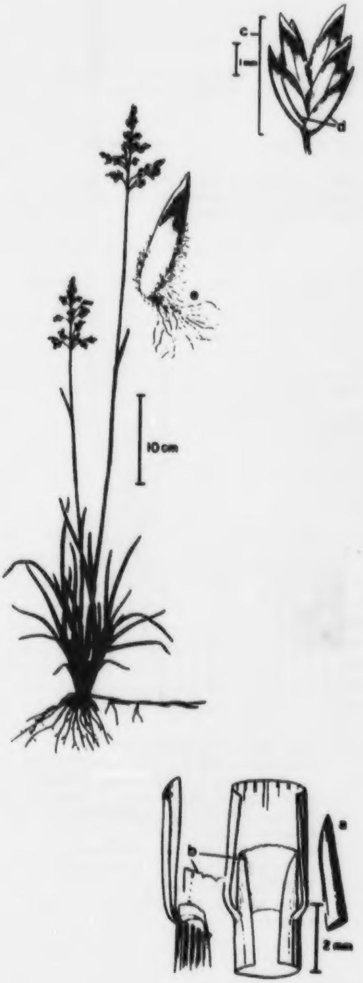
NOTE: *Poa palustris* is similar but is found in moist areas, is stoloniferous and has much longer, acute ligules.



Poa sandbergii (Sandberg's blue grass)

GRASS - small, tufted, purplish-tinged, perennial, with flowering stems 1.5 - 3 dm tall.

SHEATHS - partially closed, smooth.

LEAVES - strongly inrolled with canoe-shaped tips (a), mostly basal, 0.5-1 mm broad and 2-3 cm long.

LIGULES - long and acute (b); no auricles.

INFLORESCENCE - erect, sparsely flowered panicle with erect branches spreading slightly when in flower; many florets per spikelet (c); glumes (d) awnless and smaller than the lemmas; lemmas (e) awnless, elongate, scabrous above, with short hairs below, and have a distinctive reddish colour.

HABITAT -

	PPBG			IDF						ICH			MS		SBPS	ESSF				
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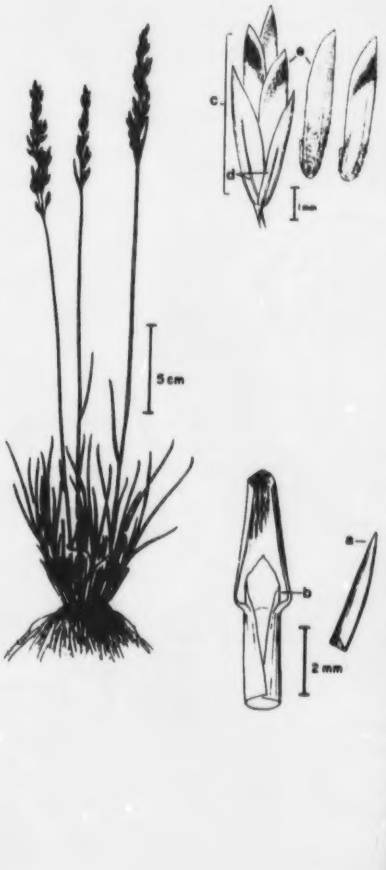
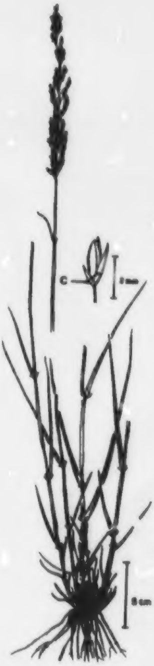
NOTE: *Poa canbyi* is larger and has scabrous sheaths. *Poa nevadensis* is generally more densely flowered with ligules being mostly lacerate. *Poa juncifolia* has larger spikelets, is more robust, and has ligules which are thickish, strongly ciliolate, truncate to rounded. This is an extremely difficult genus and is best handled by an expert.





Sporobolus cryptandrus (Sand dropseed)

GRASS - strongly tufted perennial, 3-7 dm tall with strongly grooved culms.

SHEATHS - smooth except along margins and throat which are strongly hairy-woolly (a).

LEAVES - flat, 2-5 mm wide, rolled in when dry.

LIGULES - very short, ciliolate (b), 0.5 - 0.7 mm long.

INFLORESCENCE - panicle 10-20 cm long, usually partially included in the sheath; spikelets 2 to 2.5 mm long; glumes unequal (c); lemma and palea acute.

HABITAT - sandy soils in open grasslands and foothills.

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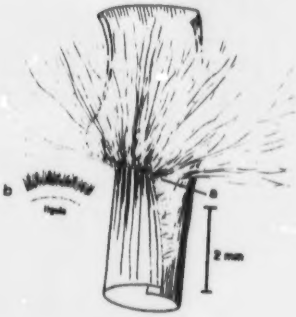
NOTE: Seed grains can be eaten in porridge or ground into flour.



Stipa comata (Needle-and-thread grass)

GRASS - a conspicuous and distinctive looking grass when in flower and fruit; the flowering stems are up to 7 dm high; forms low bunches.

SHEATHS - open.

LEAVES - inrolled, flat only when very young, held in a suberect angle to the stem.

LIGULES - (a) long; no auricles.

INFLORESCENCE - a contracted panicle in flower but becomes open and spreading when in fruit; panicles have few spikelets, one floret per spikelet; glumes (b) are awnless, longer than the lemmas; lemmas are awned with the awns (c) usually over 10 cm long and very stiff; the base of the florets is distinctly pointed and adheres easily to most articles of clothing.

HABITAT -

	PPBG			IDF						ICH			MS		SBS	ESSF				
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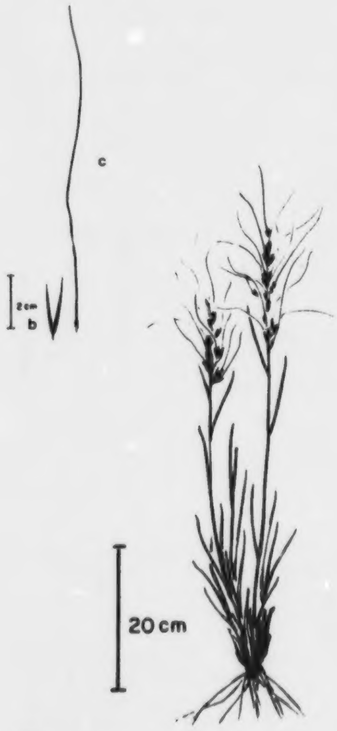
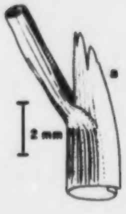




Stipa occidentalis (Western needle grass)

GRASS - low diffuse bunches with flowering culms up to 8 dm high.

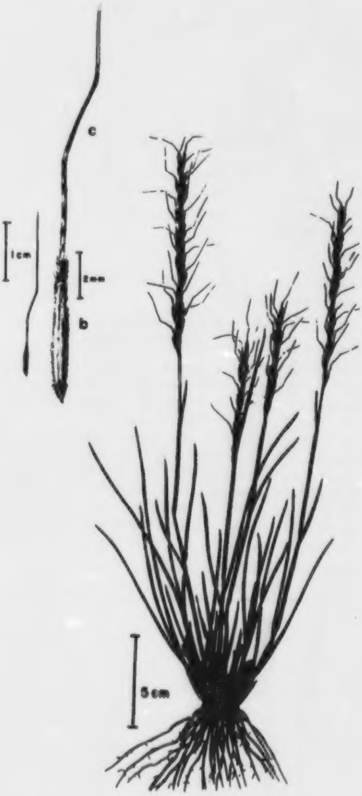
SHEATHS - open and variously hairy.

LEAVES - often strongly inrolled, however in moist conditions leaves are flat.

LIGULES - (a) short, resemble those of *Festuca idahoensis, occidentalis* and *scabrella;* no true auricles.

INFLORESCENCE - a narrow, congested panicle with erect panicle branches, dirty green colour, many spikelets, one floret per spikelet; glumes are awnless, greenish, longer than the lemmas; lemmas (b) are awned, noticeably hairy; awns (c) are about 3-4 cm long and bent.

HABITAT -



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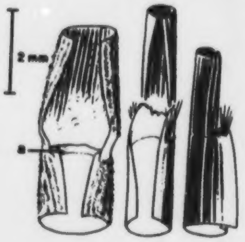
NOTE: Compare with *Stipa richardsonii.*



Stipa richardsonii
(Richardson's needle grass)

GRASS - a small bunch forming grass of finer textured soils than *Stipa occidentalis;* flowering culms are up to 5 dm tall.

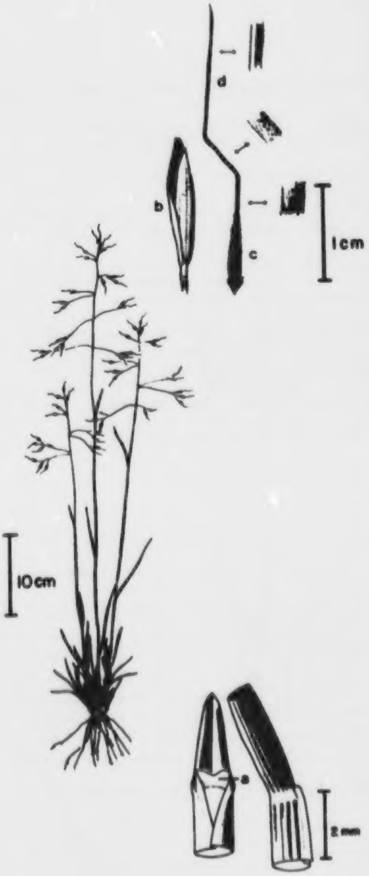
SHEATHS - open and variously hairy.

LEAVES - 1.5-3 mm broad, folded or somewhat inrolled.

LIGULES - (a) short, resembling those of *Stipa occidentalis;* no true auricles.

INFLORESCENCE - **a spreading panicle** with only a few spikelets borne at the tips of hair-like panicle branches; there is only one floret per spikelet; the purplish awnless glumes (b) are longer than the lemmas and give the inflorescence its distinctive purple colour; **the glumes are noticeably unequal in size** and shape; the lemmas (c), (approximately 1 cm long), are awned, the awns (d) are generally slightly shorter than those of *Stipa occidentalis.*

HABITAT - forest grassland interfaces, prefers receiving sites.



Vahlodea atropurpurea
(Mountain vahlodea)

GRASS - a robust fibrous-rooted perennial; flowering culms are 4-5 dm tall and distinct purplish colour.

SHEATHS - open, purplish tinged.

LEAVES - broad, moderate length, canoe-shaped apices, tend to nod slightly, but are generally fairly erect.

LIGULES - (a) moderately long; no auricles.

INFLORESCENCE - open panicle, 5-10 cm long; spikelets purplish-tinged up to 3 flowered; glumes (b), unequal in length, about 5 mm long, acute; lemmas 2.5 mm long with a tuft of hairs (c) at base, awned slightly above midlength; the awn (d) is slightly bent, 2.5 mm long.

HABITAT - woods and wet meadows at subalpine and alpine elevations.

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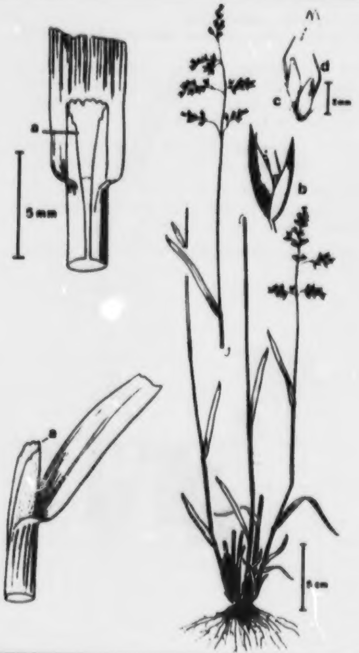

Vulpia octoflora (Slender vulpia)

GRASS - **small annual**, 1-4 dm tall.

SHEATHS - open, smooth.

LEAVES - blades narrow or inrolled, 2-10 cm long.

LIGULES - (a) 0.2-0.7 mm long, margins irregular, longer on the sides.

INFLORESCENCE - panicle, slender, erect, flattened 2-20 cm long; spikelets 6-8 mm long, densely 5-13 flowered (b); glumes unequal, narrowly triangular 4-4.5 mm long; lemmas lanceolate with straight awns, 3-5 cm long.

HABITAT - on open and often disturbed sites, usually on dry soil.

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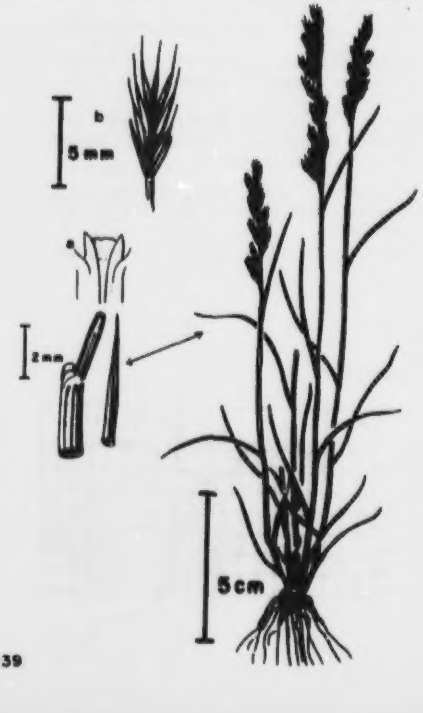


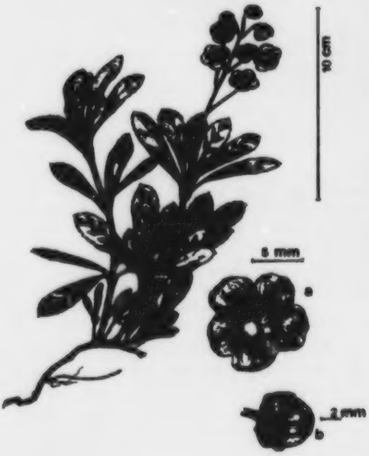
Chimaphila umbellata
(Prince's-pine, Common western pipsissewa)

HERB - evergreen, quite stout, slightly woody perennial with creeping rootstock; stem to 3.5 dm tall, simple or branched, greenish, without hairs.

LEAVES - **whorled**, bright green and shiny above, narrowly oblong, sharply toothed.

FLOWERS - (a) 3-10 in a small loose cluster; **petals white to pink and waxy**; flower stem with fine hairs.

FRUIT - (b) depressed globose capsule to 7 mm broad.



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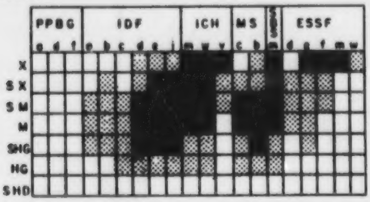

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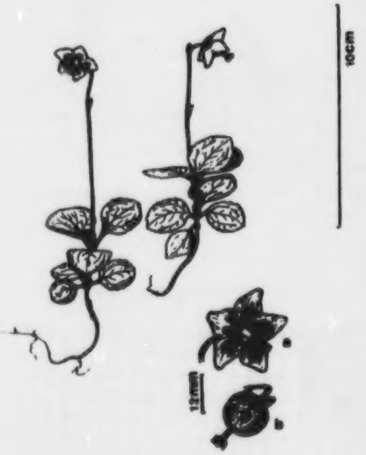
Moneses uniflora
(Single delight, One-flowered wintergreen)

HERB - a delicate, evergreen herb arising from a very slender rhizome, up to 15 cm tall.

LEAVES - **opposite or mostly in whorls of 3**, thin and obscurely veined, with margins serrated, **usually obovate**.

FLOWERS - (a) **white, waxy, solitary, terminal**, nodding; on a stem with one or two bracts.

FRUIT - (b) globose capsule to 8 mm broad.



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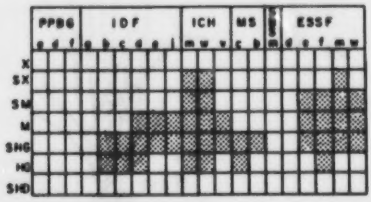

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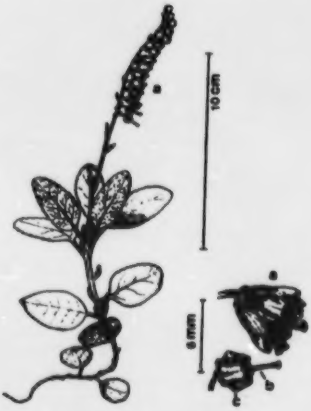
Orthilia secunda
(Few flowered one-sided wintergreen)

HERB - perennial with a slender much-branched rhizome; stem single, leafy towards base and often woody.

LEAVES - numerous, oval elliptical, serrated, dark green above, paler beneath.

Flowers - 6-20 on elongated cluster with flowers (a) directed to one side (secund), petals light greenish to white, style straight (b), 10-20 flowered.

FRUIT - depressed globose capsule to 5 mm broad (c).



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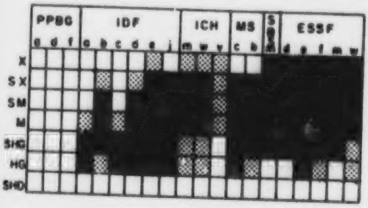


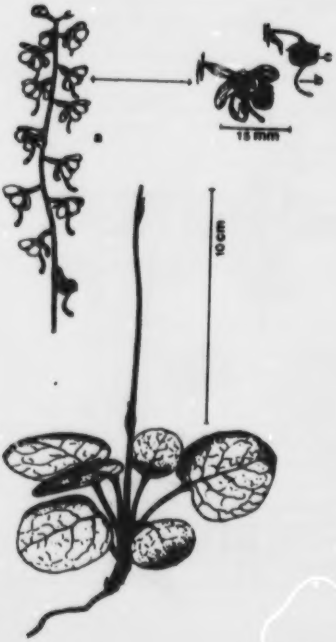
Pyrola asarifolia (Common pink pyrola)

HERB - perennial, with long creeping branched rootstock; flowering stem up to 4 dm tall.

LEAVES - circular to elliptic, leathery, shiny dark green on top, purplish beneath, petiole as long as the blade.

FLOWERS - 10-25 in a long loose cluster (a), petals pinkish to purplish red, style long, bent to one side (b).

FRUIT - capsule 6-8 mm broad (c).



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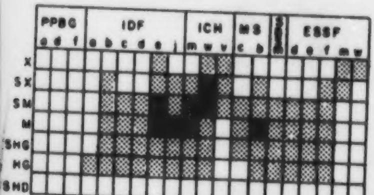


Pyrola chlorantha

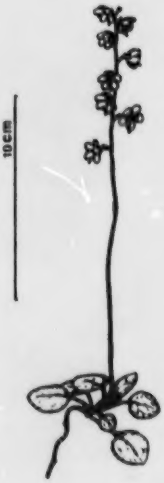
(Green pyrola, Green wintergreen)

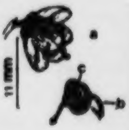
HERB - perennial with long slender rhizomes and leafy sterile shoots; flowering stem to 25 cm tall.

LEAVES - circular to broad oval, leathery, pale green on top, darker beneath; **petioles longer than blade.**

FLOWERS - (a) in a long cluster of few to 10 flowers, **petals pale yellowish to greenish white, style bent to one side** (b), 3-6 mm long.

FRUIT - (c) depressed-globose capsule.





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NOTE: Easily confused with *Pyrola minor* when flowers are not present.

Pyrola minor

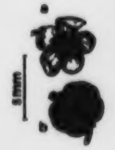
(Lesser pyrola, Lesser wintergreen)

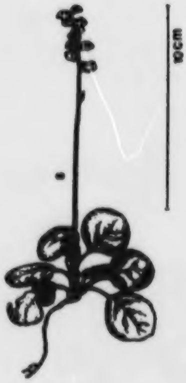
HERB - perennial with a slender rhizome; flowering stem single, naked to 25 cm tall.

LEAVES - broadly elliptic or orbicular, **dark green and thin,** rounded to heart-shaped at base with rounded teeth; petioles as long or longer than blades.

FLOWERS - (a) 5-20 flowered cluster with flowers not directed to one side, petals **white or pink, style straight,** 1-2 mm long.

FRUIT - (b) depressed-globose capsule, 5-6 mm broad.





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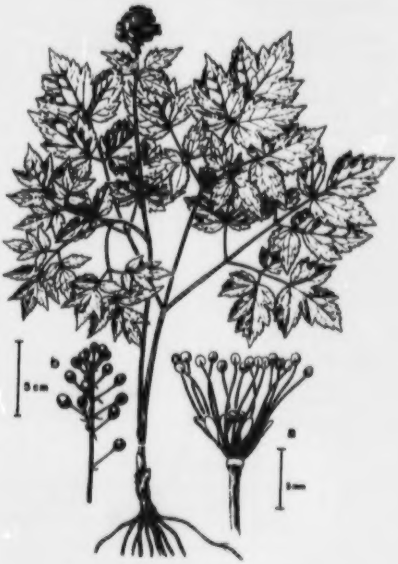
Actaea rubra (Red baneberry)

HERB - stems 1-several 0.4-1 m tall, branched.

LEAVES - few, 2-3 ternate, toothed and lobed.

FLOWERS (a) white, in terminal and axillary inflorescences.

FRUIT - (b) glossy red or white berries, poisonous.



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Anemone multifida (Pacific anemone)

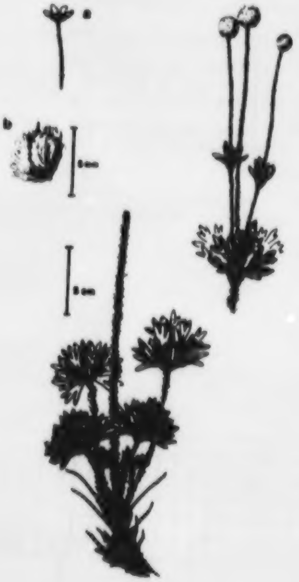
HERB - hairy, perennial with one to many stems from a thickened stem base commonly branched; 1.5 - 5 dm tall.

LEAVES - basal leaves numerous, in threes or fours and cleft 2 or 3 times; leaves at base of flower stems dissected similarly to basal leaves.

FLOWERS - (a) yellowish and tinged with red, blue or purple, particularly on outer surface.

FRUIT - (b) achenes borne in somewhat spherical cluster, woolly-silky.

HABITAT - found in grasslands, dry open woods, meadows and alpine.



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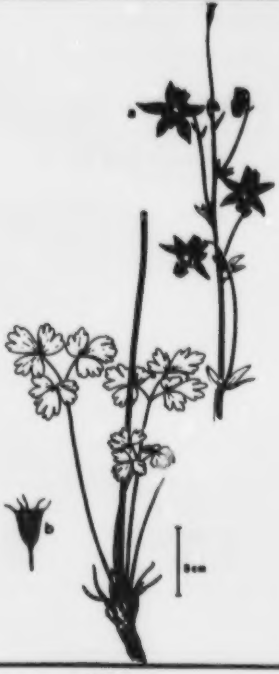
Aquilegia formosa (Sitka columbine)

HERB - simple to branched stem up to 1 m tall, leaves mainly basal and reduced.

LEAVES - blades are in groups of three (triternate), blue-green, the leaflets are thin, 2-3 times shallowly lobed, smooth on top, pubescent beneath.

FLOWERS - several (a), nodding, sepals pale to deep red, spurs red and straight, petal blades yellow.

FRUIT - (b) an erect or slightly spreading follicle.



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NOTE: Leaflets similar to *Thalictrum occidentale.*

Caltha leptosepala
(Alpine white marsh-marigold)

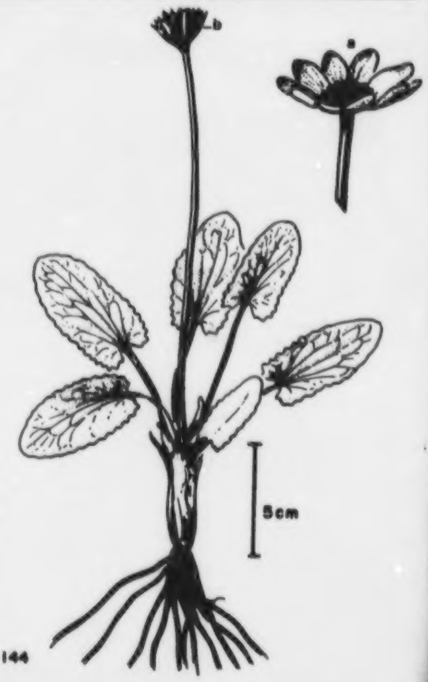
HERB - fleshy perennial, 0.5-4 dm tall.

LEAVES - abundant, oblong-oval, to 6 cm long, nearly entire to serrated, waxy green, petioles shorter than the blades.

FLOWERS - showy, white, tinged with blue and a greenish-yellow centre (a).

FRUIT - follicle (b), subsessile.

HABITAT - wet subalpine and alpine locations, common on organic soils.



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Coptis trifolia (Three-leaved goldthread)

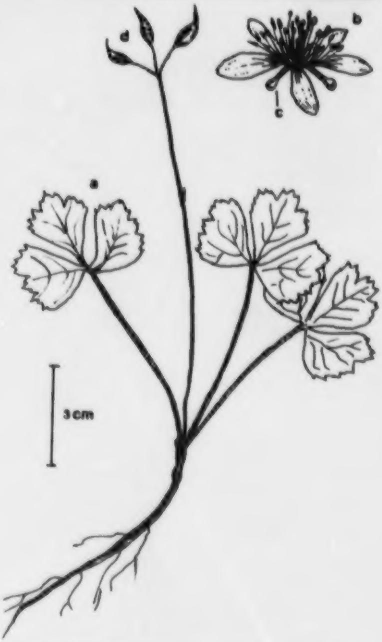
HERB - low perennial, 5-14 cm tall, from a slender, elongate, **bright yellow rhizome.**

LEAVES - **basal, evergreen,** with 3 leaflets (a), diamond-egg-shaped with largest part above middle of leaflet, sharply round-toothed and very obscurely 3-lobed.

FLOWERS - (b) solitary on leafless stalk; sepals whitish, narrowly lance-to spatula-shaped; petals (c) half length of sepals, fleshy, hollowed and nectariferous at tip and without flattened blade.

FRUIT - a follicle (d), appearing in clusters.

HABITAT - damp mossy woods and bogs.



Delphinium nuttalianum
(Upland delphinium)

HERB - perennial with fleshy rootstock; stems single, not hollow, 1.5-4 dm tall, smooth to hairy; **poisonous to cattle.**

LEAVES - few, mostly basal, with long petioles, the blades are 2-4 times divided into linear segments; the upper leaves are smaller and have fewer segments.

FLOWERS - a loose raceme of 3 to 15 blue to violet flowers (a); sepals 5, blue, ovate, the uppermost bearing a backward projecting spur (b); petals 4, blue or white heavily purplish penciled, deeply notched (c) on lower edge, upper petals white or bluish.

FRUIT - follicles (d) somewhat spreading at maturity.

HABITAT - sagebrush desert to mountain valleys and slopes.

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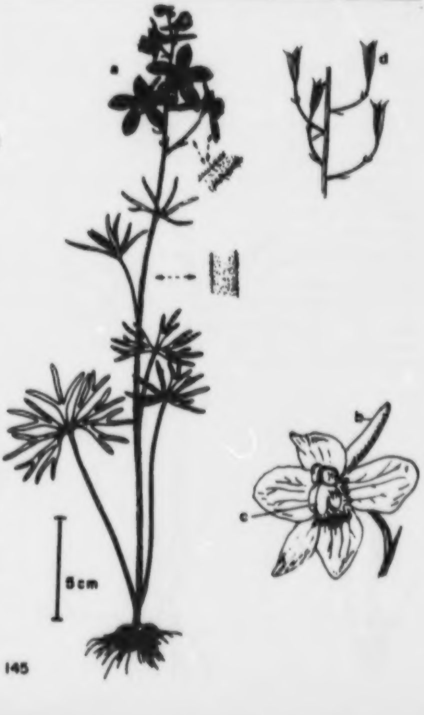
NOTE: *Delphinium bicolor* is similar with the lower petal notched less than 1/5 the length.



Pulsatilla occidentalis
(Western pasqueflower, Tow-head baby)

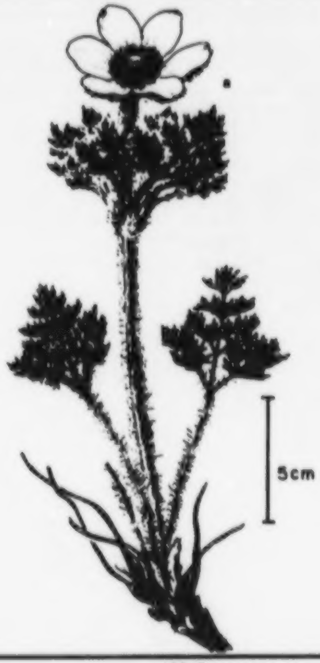
HERB - perennial with stems 2-5 dm tall, greyish to green, long hairy throughout, from an often branched woody base.

LEAVES - have long petioles, large, more than 2 leaflets per leaf, arranged in threes "parsley-like" (finely divided).

FLOWERS - single on stem (a), white or slightly purplish tinged.

FRUIT - big fluffy seed heads with long silky plumes.

HABITAT - mountain slopes and meadows at middle to higher elevations.



Pulsatilla patens* ssp. *multifida
(Prairie crocus)

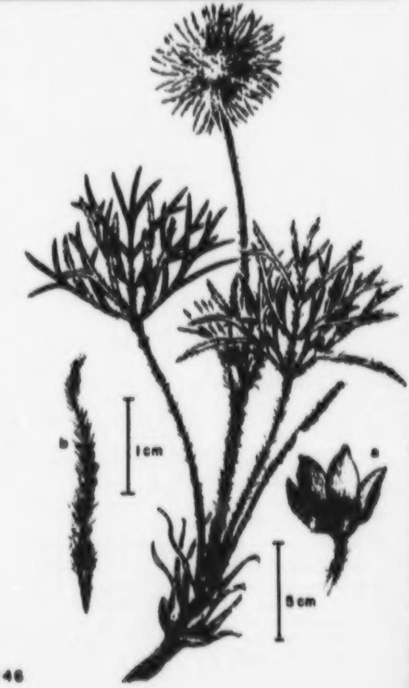
HERB - perennial with 1 to many stems, 5-25 cm tall, greyish hairy throughout from a simple or branched woody base.

LEAVES - basal leaves numerous with long petioles; leaves are 4-10 cm broad, primarily ternate but divided into numerous, strongly veined, ultimately linear divisions; leaves on flowering stem are without petioles and are dissected.

FLOWERS - single, blue to purple (a).

FRUIT - numerous silky achenes with slender plumose style (b).

HABITAT - prairies to mountain slopes, mostly on well drained soils, rare in the Kamloops region.



NOTE: Found in subxeric to mesic ecosystems in the IDFg (Nelson Region).

Ranunculus eschscholtzii
(Subalpine buttercup)

HERB - perennial with 1 to several stems, 5-25 cm tall, and fibrous roots.

LEAVES - basal ones slender petiolate, kidney-shaped to oval in outline, from shallowly 3-lobed to 2-3 times dissected; stem leaves sessile.

FLOWERS - (a) 1-3, **yellow, terminal**; petals 5, 7-15 mm long.

FRUIT - achene (b), glabrous to lightly hairy, with recurved stylar beak.

HABITAT - mountain meadows and talus slopes, **often blossoming at edges of melting snowbanks.**

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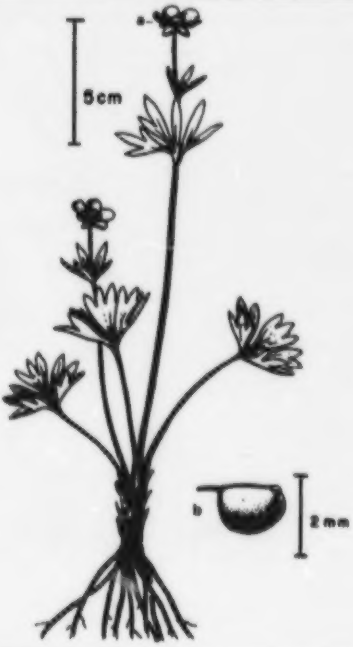

Ranunculus uncinatus
(Little-flowered buttercup)

HERB - annual or perennial usually with a single, erect, sometimes branched, hollow stem, hairy to nearly smooth, and with coarse fibrous roots.

LEAVES - basal leaves with petioles up to 20 cm long; blades heart-shaped to deltoid, 3-8 cm long, deeply trilobed, the lateral segments again lobed nearly half their length and with a few deep teeth, the central segment shallowly trilobed; stem leaves few.

FLOWERS - petals 5, yellow, **small** (a).

FRUIT - an achene with a persistent hooked style resembling a claw (b).

HABITAT - moist soil, often in shade.

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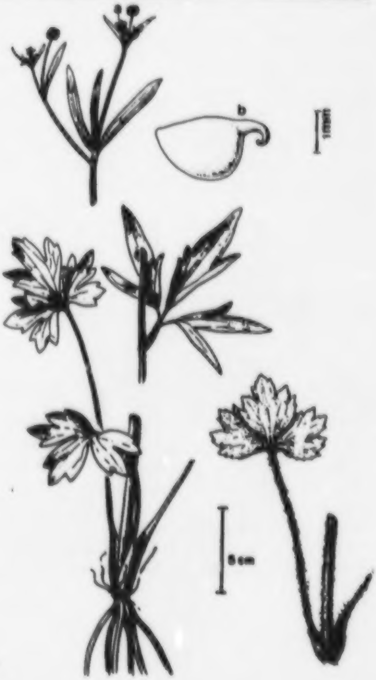


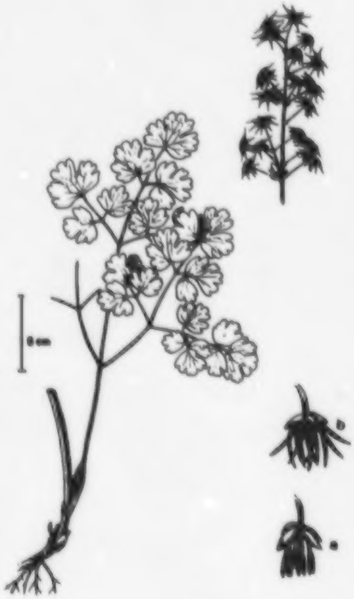
Thalictrum occidentale (Western meadowrue)

HERB - delicate, perennial; stems 0.4-1 m tall, **young stems dark purplish.**

LEAVES - 3-4 times ternate; leaflets 3-lobed, each lobe less deeply 2-3 lobed or toothed, **glabrous.**

FLOWERS - **greenish white (female) to purplish (male)**; male (a) and female (b) flowers on separate plants.

FRUIT - achene with 3 prominent nerves on each side.



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NOTE: *Aquilegia formosa* is similar except its leaves are hairy beneath.

Trollius laxus (White globe flower)

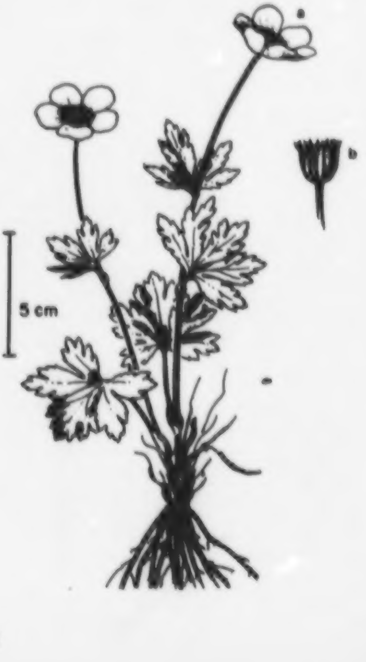
HERB - smooth perennial with strong fibrous roots; stems 1-several, 1-4 dm tall.

LEAVES - basal leaves have long petioles with broad membranous stipules giving the base a distinctive sheathed appearance; the leaf blade is divided into 5 obovate, 3 lobed, toothed segments; stem leaves have short petioles below and are sessile above.

FLOWERS - (a) solitary, greenish white to cream with golden centres.

FRUIT - a follicle 8-11 mm long (b).

HABITAT - swampland to alpine meadows or wet slopes usually flowering as the snow recedes.



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Aruncus dioicus (Sylvan goat's-beard)

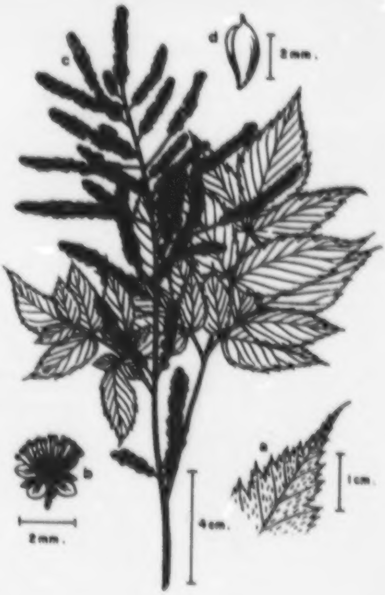
HERB - deciduous perennial with stout short-creeping rhizomes and several stems 1-2 m tall.

LEAVES - alternate; mostly 3 times compound, sharply serrated (a), more or less hairy on both sides.

FLOWERS - white (b), in a dense, terminal, compound cluster (c).

FRUIT - follicle (d), 3 mm long.

HABITAT - in damp woods and along streams.



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NOTE: This is a successional species.

Dryas octopetala (White mountain avens)

HERB - **a small alpine plant** about 5 cm high; flower stalk is hairy with black glandular hairs (a) on upper part.

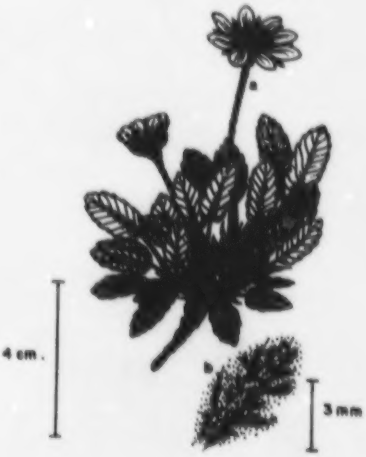
LEAVES - the margins are rounded or sharp toothed, rolled under, strongly wrinkled (veins are sunken), smooth or slightly hairy on upper surface, **white woolly beneath**; veins are prominent with brownish hairs (b).

FLOWERS - single on a stalk, white with 8 petals; in July and August.

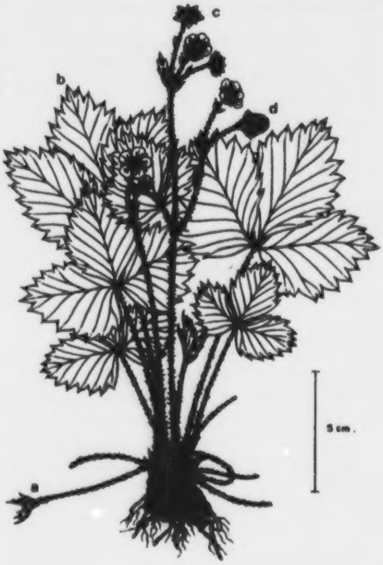
FRUIT - achene with persistent plumose, styles forming a fluffy white tuft.

HABITAT - alpine meadows.

NOTE: *Dryas drummondii* is similar but has pale yellow flowers.



Fragaria vesca (Wood strawberry)



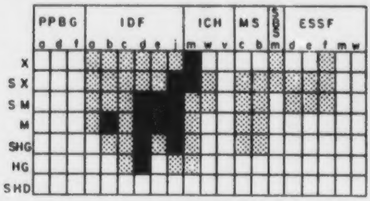
HERB - perennial with 1 to several crowded, short and thick rootstocks spreading by runners (a).

LEAVES - **leaflets are bright yellow-green** and sparsely hairy **on upper surface,** paler and somewhat whitish below, in groups of of 3; margins are serrated, with the terminal tooth (b) **more than 1/2 as wide as the adjacent lateral teeth and projecting beyond them; leaflets are sessile.**

FLOWERS - (c) white to pinkish tinged in cymes of 3-11 flowers.

FRUIT - small "strawberry" (d), fruit stem often surpassing leaves; succulent and palatable.

HABITAT



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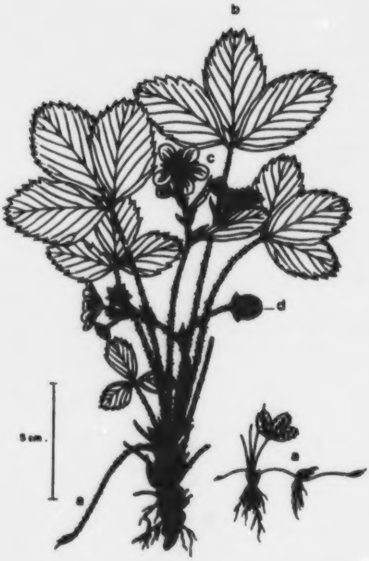
Fragaria virginiana* ssp. *glauca
(Blueleaf strawberry)



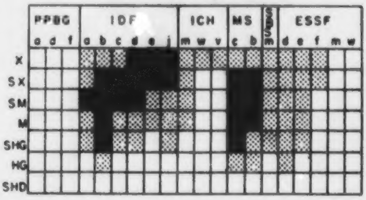
HERB - perennial with rootstock usually a single crown, with several trailing shoots (a); flowering stem up to 15 cm tall.

LEAVES - **leaflets are glaucous bluish green above,** naked to silky hairy beneath, in groups of 3; **margins are serrated with terminal tooth** (b) **less than 1/2 as wide and shorter than the adjacent teeth,** leaflets with short petiole.

FLOWERS - (c) white, in open cymes of 2-15 flowers.

FRUIT - small "strawberry" (d), fruit stem shorter than leaves; juicy, delicious, and much richer in flavour than domestic species.

HABITAT



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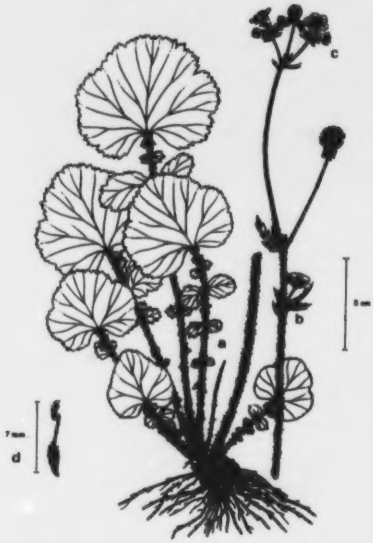
Geum macrophyllum (Large-leaved avens)

HERB - perennial, rhizomatous, with stems to 1 m tall, bristly hairy below.

LEAVES - those from rootstock are long petioled, with terminal segments largest, **heart-to-kidney-shaped, and several smaller leaflets occurring below** (a); stem leaves sessile or nearly so, deeply 3-lobed or 3-foliate.

FLOWERS - bright yellow, from leaf axils (b) or in terminal inflorescence (c).

FRUIT - achenes (d) short-hairy.



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Geum triflorum (Old man's whiskers)

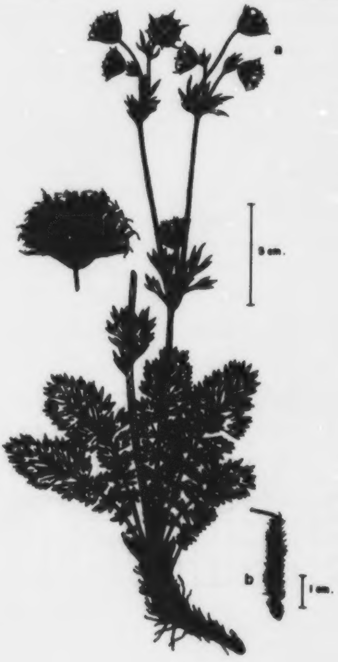
HERB - perennial, rhizomatous, with stems to 4 dm tall, soft hairy throughout.

LEAVES - basal leaves have many deeply cut leaflets, hairy on the veins beneath; stem leaves, usually 2 or 4 opposite, small, pinnate with linear divisions.

FLOWERS - purplish, nodding, in clusters (a), from May to July.

FRUIT - distinctly hairy achene with long plumose style (b).

HABITAT - open dry calcareous situations, gravelly soil, grasslands.



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Luetkea pectinata (Partridgefoot, Leutkea)

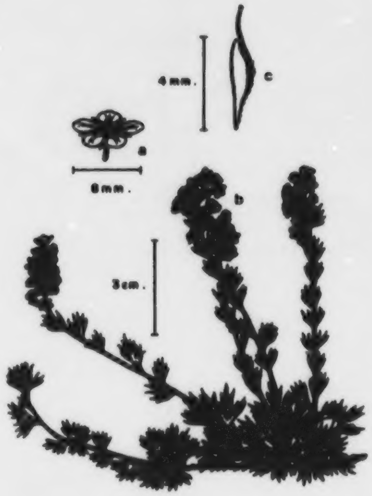
HERB - prostrate, evergreen, mat-forming semi-shrub; flowering stem up to 15 cm tall.

LEAVES - numerous, mostly crowded in thick basal tufts, without stipules, two to three times 3-dissected, withering and persistent for many years.

FLOWERS - white (a) in a terminal cluster (b), on an upright leafy flowering stem.

FRUIT - several seeded follicle (c).

HABITAT - moist or shaded locations in subalpine and alpine.


4 mm.
c
a
8 mm.
b
3 cm.

Potentilla glandulosa (Sticky cinquefoil)

HERB - perennial from a branched woody stem base, with several unbranched erect stems up to 5 dm tall, from smooth to densely glandular hairy.

LEAVES - mostly basal with long petioles, 5-9 leaflets; leaflets are sharply serrate, wedge-shaped to oblong-ovate, glandular hairy to nearly smooth; stem leaves few and reduced.

FLOWERS - a more or less spreading cluster of yellow flowers (a).

FRUIT - an achene (b).

HABITAT - open woods, plains and hillsides.

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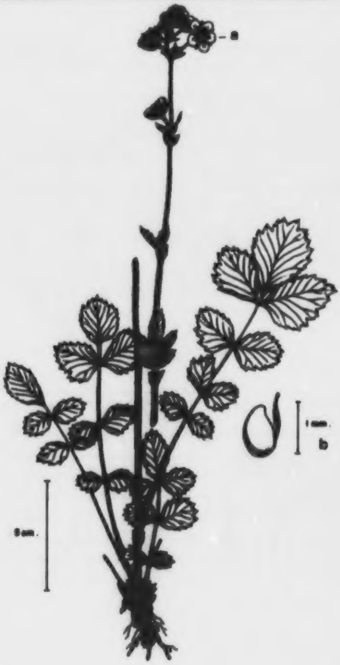


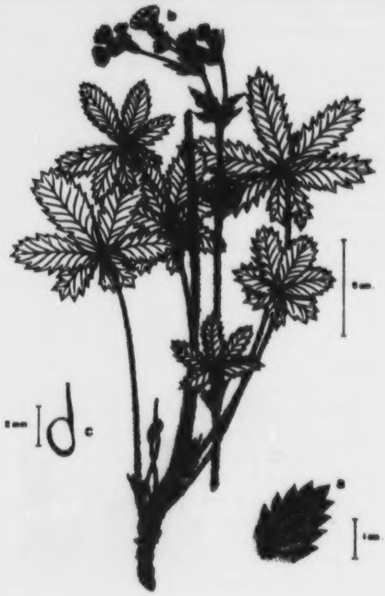
Potentilla gracilis (Grace cinquefoil)

HERB - perennial with stout, branched caudex, with several stems up to 8 dm tall, erect.

LEAVES - basal leaves numerous, blades hand-like; leaflets variable in shape, serrations (a) pubescence, usually paler beneath, and from nearly smooth to densely hairy, the petiole sometimes longer than the leaflet; stem leaves 1 or 2.

FLOWERS - (b) many-flowered cluster, flowers yellow, May to July.

FRUIT - greenish-drab, smooth achene (c).



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Potentilla palustris (Marsh cinquefoil)

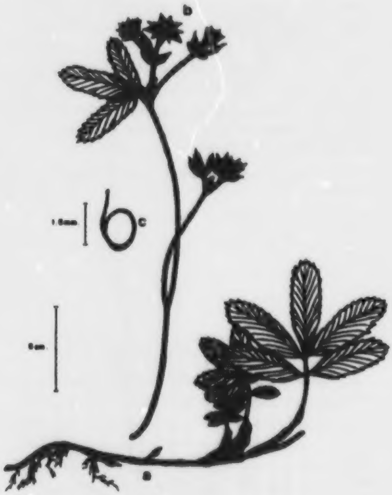
HERB - perennial with long-creeping often floating, more or less woody rhizome (a); stems frequently reddish below, to 1 m tall.

LEAVES - basal leaves pinnate, 5-7 leaflets; leaflets coarsely serrated, pale green above, glaucous on the underside; upper leaves smaller.

FLOWERS - (b) several to many in loose terminal cluster, purple-brown.

FRUIT - a brownish purple, plumply ovate, achene (c).

HABITAT - in marshes and bogs, usually at least partly submerged. Common throughout the province.



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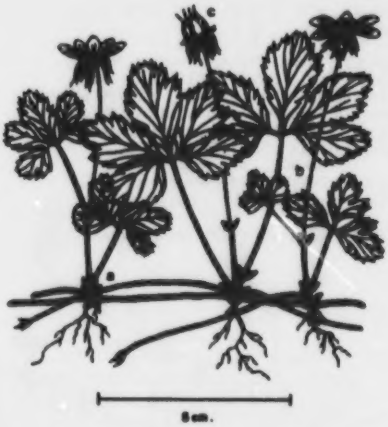
Rubus pedatus (Strawberry bramble, Five-leaved creeping raspberry)

HERB - perennial with creeping stem, rooting at the nodes (a); produces short, erect stems bearing 1-3 leaves; flowering stems erect, unarmed.

LEAVES - usually palmately 5-foliate and coarsely serrated.

FLOWERS - solitary on very slender pedicels (b), petals white, spreading or reflexed.

FRUIT - red drupelets (c), more or less coherent; very small and not particularly flavourful.



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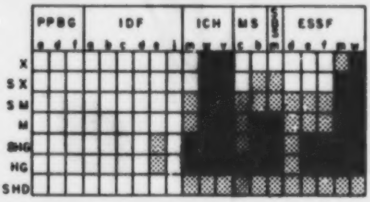

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Rubus pubescens (Dwarf red blackberry)

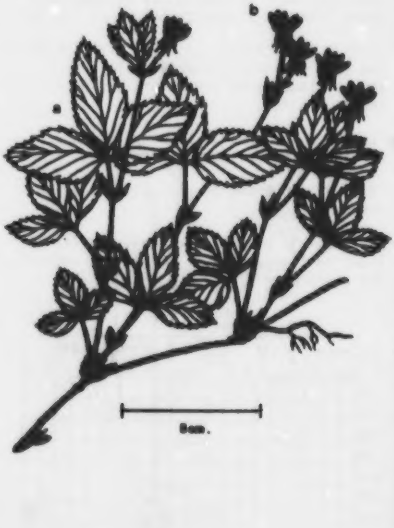
HERB - perennial with slender trailing stems, often rooting at nodes, with soft long hairs; flowering stem erect, unarmed, to 5 dm tall.

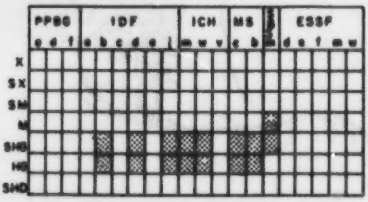
LEAVES - 3-foliate (a), acute, sharply toothed and often entire on basal portion.

FLOWERS - 1-3 on short lateral branches (b); pedicels covered with stalked glands; petals white to rarely rose, erect.

FRUIT - aggregate of dark red drupelets, edible.

HABITAT - in forest, typically an interior species.





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NOTE: May be mistaken for *Fragaria* spp. when vegetative but is much more robust, and the base of the leaflets are more wedge-shaped.

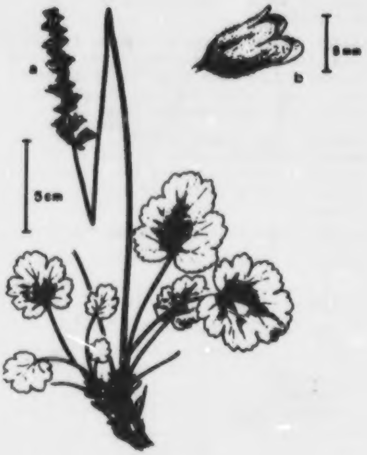
Heuchera cylindrica
(Round-leaved alumroot)

HERB - perennial with branching base and short thick rhizomes; flowering stems 1.5-9 dm tall with glandular hairs on upper stem, stem naked with 1-3 brownish-greenish bracts.

LEAVES - all basal, oval shaped, 1-6 cm wide, from shorter to longer than broad, from smooth to very glandular hairy, sticky; have irregular lobes.

FLOWERS - in a spike-like inflorescence (a), flowers are cream-coloured to greenish-yellow, bell-shaped (b).

HABITAT -



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Leptarrhena pyrolifolia
(False saxifrage, Leatherleaf saxifrage)

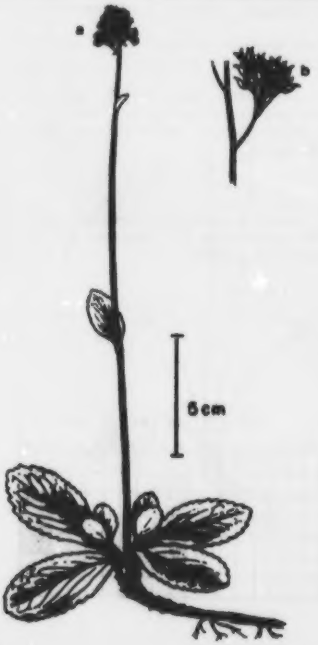
HERB - perennial with robust wide-spreading horizontal rootstock.

LEAVES - mostly basal, leathery, oval-oblong, margin round-toothed, bright green above, pale green beneath; 1-3 smaller leaves on flowering stem.

FLOWERS - white (a), in a tight cluster at the tip of a 2-4 dm long stem; in fall flowering stems are purplish-red.

FRUIT - purplish-red capsules (b).

HABITAT - streambanks and wet ground, in subalpine and alpine meadows.



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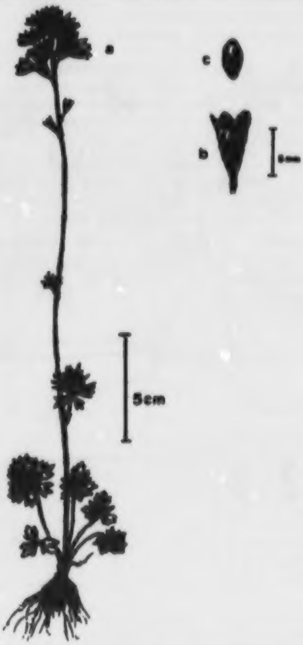

Lithophragma parviflorum
(Small-flowered woodland star)

HERB - plant with flowering stems 10-30 cm tall, stems are densely glandular, hairy, purplish above, often with greyish or whitish hairs.

LEAVES - basal leaves with petioles 2-6 cm long, the blades are 1-3 cm broad and are divided into 5 main divisions which each have 2 or 3 lobes; the stem leaves are often cleft into narrower segments.

FLOWERS - in racemes (a), 5-11 flowers; petals 3-5 cleft, white to pinkish or purplish; calyx cone-like (b); flowers appear in early spring and quickly disappear.

FRUIT - seeds ellipsoid, brown (c).

HABITAT - prairies and grassland.

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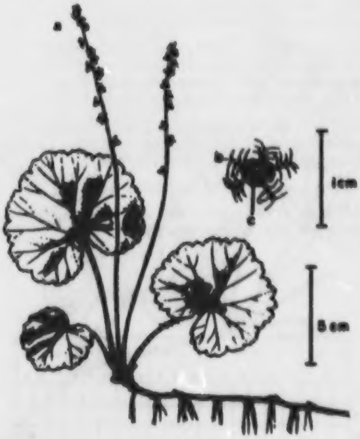
Nitella breweri (Brewer's mitrewort)



HERB - rhizomatous perennial with leafless flowering stem, 1-4 dm tall.

LEAVES - heart-to kidney-shaped, very shallowly and indistinctly 7-11 lobed, lightly round-toothed, with none to few brownish hairs.

FLOWERS - in racemes of 20 to 60 tiny flowers (a), greenish yellow saucer-shaped; petals pinnately dissected into hair-like structures (b); stamens (c) 5, alternate with petals.

FRUIT - a capsule.

HABITAT

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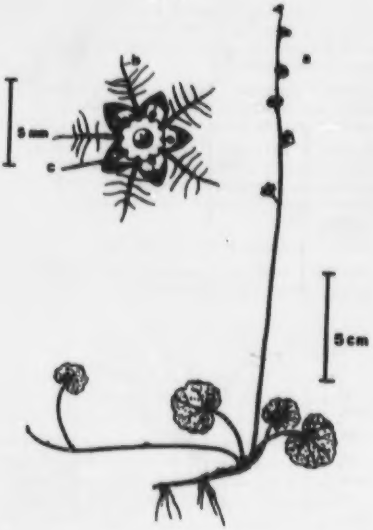
Mitella nuda (Common mitrewort)

HERB - rhizomatous, usually stoloniferous; erect flowering stems 3-20 cm tall.

LEAVES - heart-shaped to kidney-shaped, 1-3 cm long, doubly round-toothed, sparsely hairy on upper surface.

FLOWERS - inflorescence 3-12 flowered (a); calyx broadly bell-shaped-saucer-shaped, lobed 1/2 length; petals (b) greenish yellow, dissected into 8 thread-like lateral divisions; 10 stamens (c), distinguishes this species from all other *Mitella* spp.

FRUIT - a capsule.



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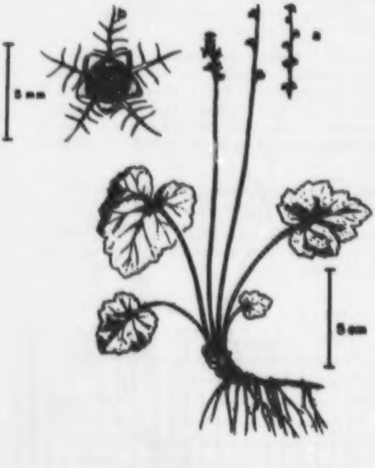
Mitella pentandra
(Five-stamened mitrewort)

HERB - perennial, occasionally with creeping shoots.

LEAVES - oval-heart-shaped, shallowly and indistinctly 5-9 lobed and round-toothed, hairy and glandular.

FLOWERS - in an elongated cluster of 6-25 flowers (a), saucer-shaped; petals (b) greenish, dissected into 4-10 thread-like segments; stamens 5, opposite petals.

FRUIT - a capsule.



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Parnassia fimbriata
(Fringed Grass-of-Parnassus)

HERB - with short, stout rootstock, 1 to several flowering stems 15-30 cm tall with a clasping, heart-shaped bract half way up the stem.

LEAVES - numerous, basal, on long slender petioles, blades are kidney-shaped, cordate at the base, 2-4 cm broad.

FLOWERS - solitary (a), white, 5 petals, conspicuously veined, 5 stamens with a yellowish, fan-shaped structure with gland-tipped "fingers" between each stamen (b).

FRUIT - a capsule opening at the apex.

HABITAT - bogs, wet meadows, and streambanks, lower alpine to arctic-alpine.

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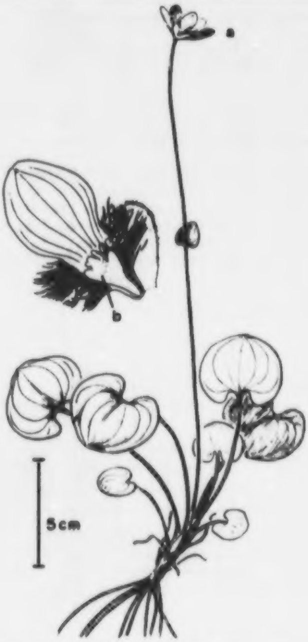

Saxifraga bronchialis ssp. *austromontana*
(Prickly saxifrage)

HERB - tufted perennial up to 30 cm broad.

LEAVES - (a) rigid, spiny, closely crowded and overlapping, moss-like, linear-lanceolate, with a marginal fringe of stiff hairs; withering.

FLOWERS - flowering stems 5-13 cm tall, with several reduced, spiny leaves, the stem is glandular hairy above; flowers 2-10 in an open raceme-like flat-topped cluster; flower petals are white, usually strongly purple-spotted above the middle (b).

FRUIT - capsule, purplish, 4-5 mm long without a divergent beak.

HABITAT - from sea-level to arctic-alpine in rock crevices and rock slides to open slopes and alpine scree.

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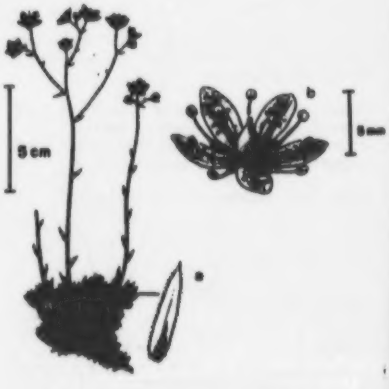


Saxifraga lyallii (Lyall's saxifrage)

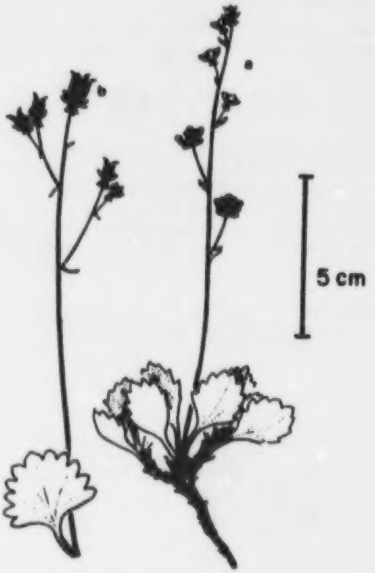
HERB - perennial with well developed rootstocks, often forming small mats.

LEAVES - all basal, the blades are 10-25 mm long and nearly as broad, prominently toothed; the leaves have slender petioles about as long as the blades, smooth or brownish hairy above.

FLOWERS - flowering stems 8-25 cm tall (a), sometimes branched; flowers, usually less than 15, white often aging to pink.

FRUIT - a follicle (b) 7-12 mm long.

HABITAT - usually along streams, ponds or in wet gravelly meadows.



Tiarella unifoliata
(Unifoliate-leaved foamflower)

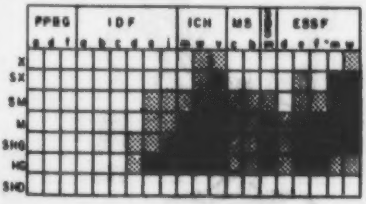
HERB - perennial with slender rootstock, slender, horizontal to ascending.

LEAVES - simple, palmately 5-lobed, to 12 cm broad and 8 cm long.

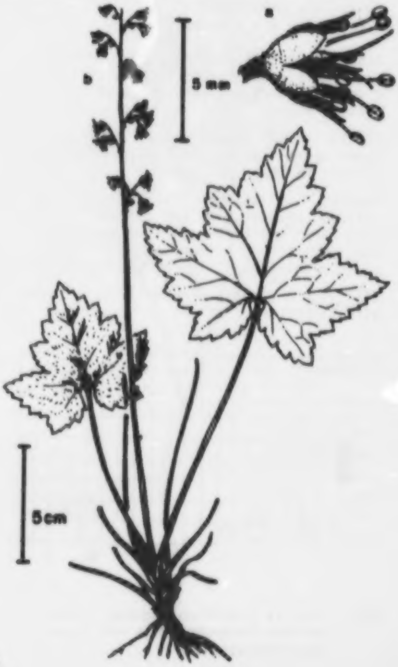
FLOWERS - white (a) in elongated cluster (b), flower stem with a single leaf.

FRUIT - a capsule.

HABITAT



NOTE: *T. trifoliata* is similar except the leaves are divided into 3 leaflets. It is mostly a coastal species.



Castilleja miniata (Scarlet paintbrush)

HERB - perennial with few erect or ascending stems from a woody base, to 8 dm tall.

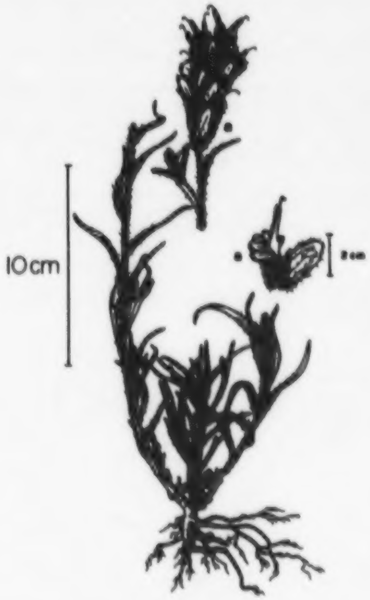
LEAVES - leaves linear to lance-shaped usually entire, with or without fine hairs.

FLOWERS - greenish, mostly concealed by bracts; inflorescence conspicuous composed of bright red to scarlet toothed and hairy bracts (a).

HABITAT - open areas, mostly at relatively low elevations, common in B.C.

NOTE: This is a difficult genus, consult further references for positive identification.

Castilleja hispida is very similar only its upper leaves are generally deeply cleft into 3-7 linear, spreading lobes.



Castilleja thompsonii
(Thompson's Indian paintbrush)

HERB - perennial with clustered ascending or erect stems, often branched, up to 4 dm tall sometimes purplish with bristly hairs.

LEAVES - lower leaves linear, entire; upper leaves (a) with 1-2 pairs of linear divergent lobes.

FLOWERS - (b) yellow; bracts are 3-5, divided, broader than the leaves, puberulent and ciliate; calyx purplish, deeply cleft and primary segments again divided or notched; lower lip prominent.

HABITAT - dry soils frequently associated with sagebrush.

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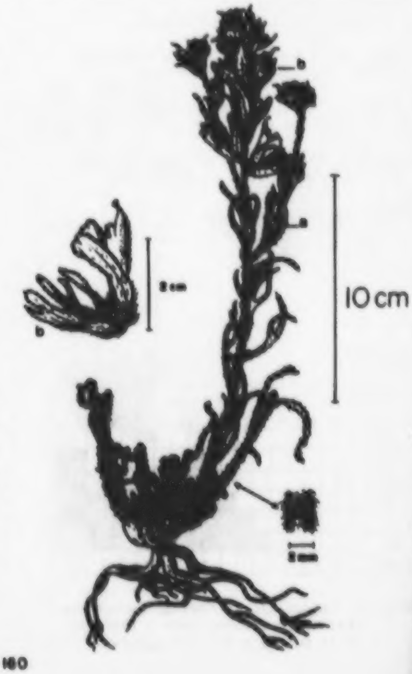
NOTE: This is a difficult genus, consult further references for positive identification.



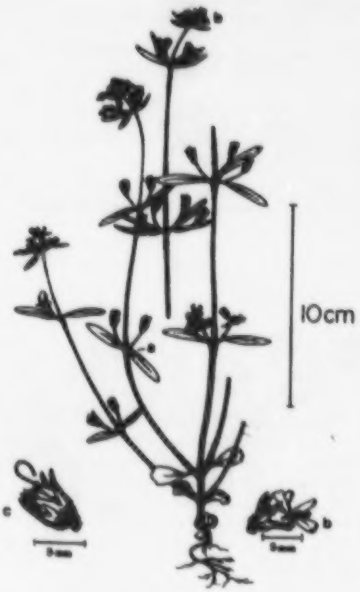
Collinsia parviflora
(Small-flowered blue-eyed Mary)

HERB - stems erect or ascending up to 5 dm tall, branched or simple, smooth to finely hairy.

LEAVES - glabrous or short-hairy, entire or nearly so, lower small and round with petioles, commonly deciduous, stem leaves narrow and becoming sessile (a), upper leaves often whorled.

FLOWERS - (b) 2-5 in a whorl above, solitary below on long pedicels, blue or pale blue with white upper lip; flowers appear for a short time only.

FRUIT - capsule (c), 3-4 mm long.



HABITAT

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Melampyrum lineare
(Narrow-leaved cow-wheat)

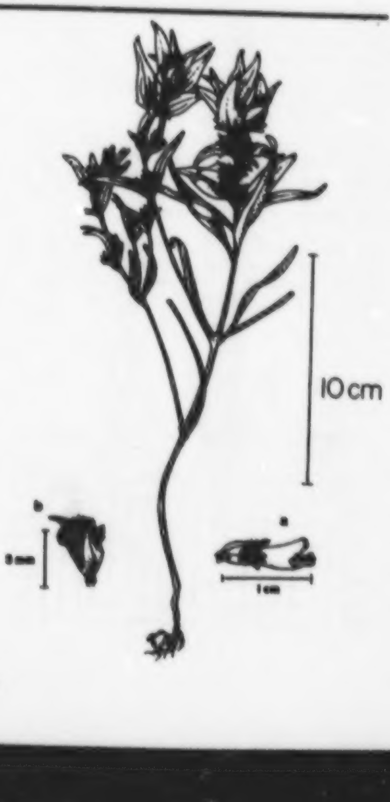
HERB - slender annual with stems simple or few-branched, 10-30 cm tall.

LEAVES - opposite, short petiolate, linear or lance-shaped.

FLOWERS - (a) white or pinkish with yellow palate, with bracts scarcely differentiated from the proper leaves.

FRUIT - a flattened capsule (b).

HABITAT -



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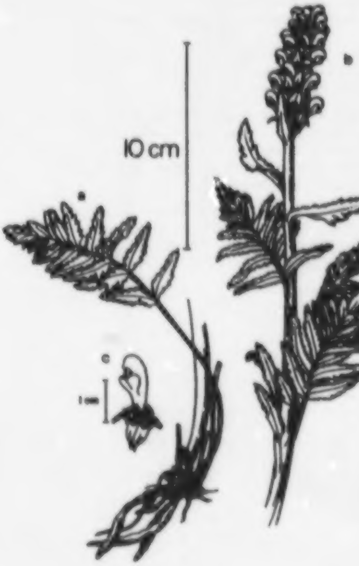
NOTE: This species acts as a host for white stalactiform blister rust which attacks Lodgepole pine.

Pedicularis bracteosa
(Bracted lousewort, Wood betony)

HERB - perennial with erect stems up to 1 m tall, fibrous roots.

LEAVES - pinnately cut, fern-like (a), up to 7 cm long, without hairs, and with short petioles; segments are finely serrate and reduced upwards.

FLOWERS - yellow, purple or red, in a spike (b); flowers (c) have hooked beaks.



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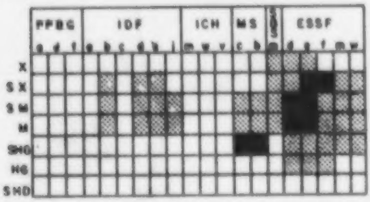
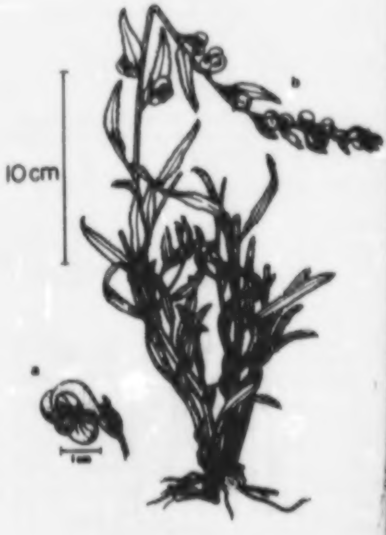


Pedicularis racemosa
(Sickle-top lousewort)

HERB - perennial with clustered stems 1.5-5 dm tall, fibrous roots.

LEAVES - lanceolate or lance-elliptic to lance-linear, 4-10 cm long and 0.5-1.5 cm wide, doubly serrate, with short petioles; lower leaves are reduced, the other well distributed along the stem.

FLOWERS - (a) pink to purplish or white to yellowish white in an elongate, lax, inflorescence (b), the lower flowers are often in the leaf axil.



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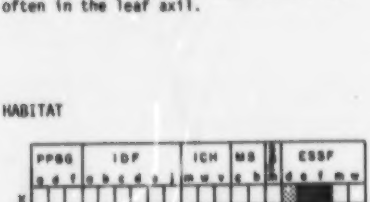
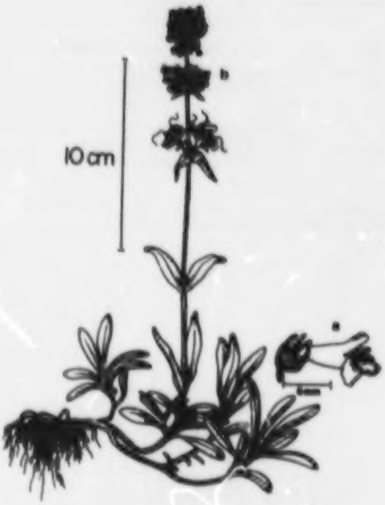


Penstemon procerus
(Slender blue penstemon)

HERB - 0.5-4 dm tall, tufted, slender stemmed; prefers open sites.

LEAVES - entire; basal leaves having petioles, elliptic or ovate up to 10 cm long and 1.5 cm wide; stem leaves few, without petioles, smaller, opposite.

FLOWERS - (a) arranged in 1 to several circular whorls (b), deep blue-purple, trumpet-shaped.



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NOTE: *Penstemon confertus* is very similar but has yellow flowers.

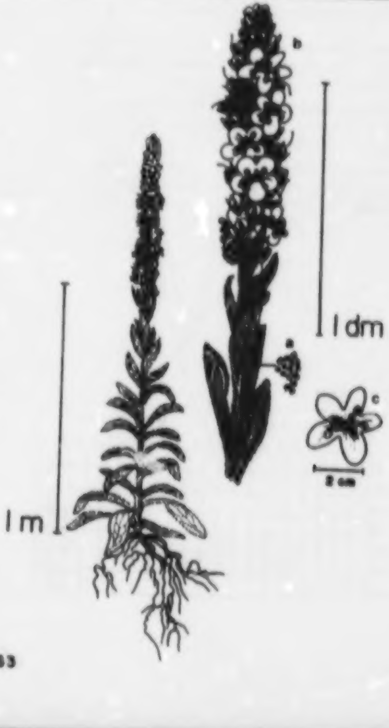
Verbascum thapsis (Great mullein)

HERB - biennial with erect stems to 2 m tall, densely covered with woolly tomentum (a), distinctive yellow-green colour.

LEAVES - obovate-lanceolate to oblong, acute with rounded teeth; rosette leaves up to 4.5 dm long; stem leaves smaller and progressively reduced upwards.

FLOWERS - dense, terminal raceme (b), flowers are yellow, up to 3 cm wide (c), concave, blooms from June to August.

HABITAT - introduced species, common on roadsides and in disturbed areas at lower elevations.



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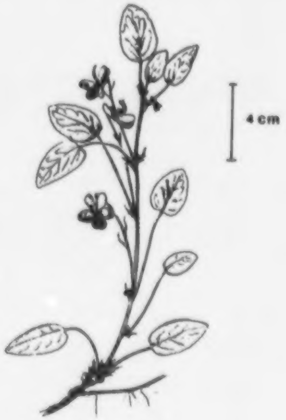
Viola adunca ssp. *adunca*
(Early blue violet)

HERB - perennial with short to elongate, slender rhizomes, usually stemless in early part of season, later developing aerial stems.

LEAVES - oval-lance-shaped to kidney-shaped, margin finely round toothed; stipules linear lance-shaped, entire to slender toothed.

FLOWERS - blue to deep violet, the lower three petals often whitish based.



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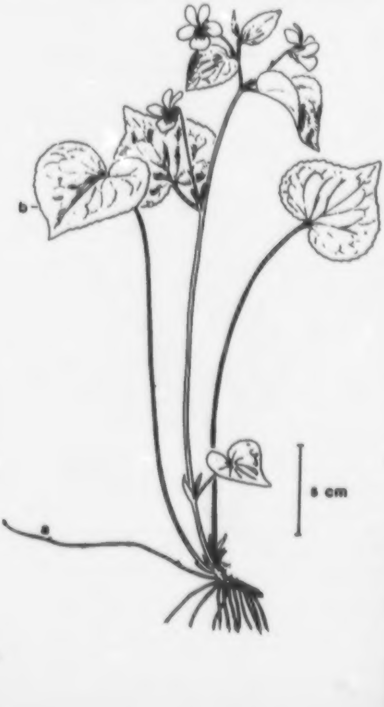
Viola canadensis (Canada violet)

HERB - perennial with short thick rootstock and often with slender, creeping stolons (a); stems 1 - 4 dm.

LEAVES - heart-shaped, long-stemmed, usually hairy on one or both surfaces, margin serrated (b).

FLOWERS - occurring on upper portion of stem, white with yellow base, purplish tinged on outside.



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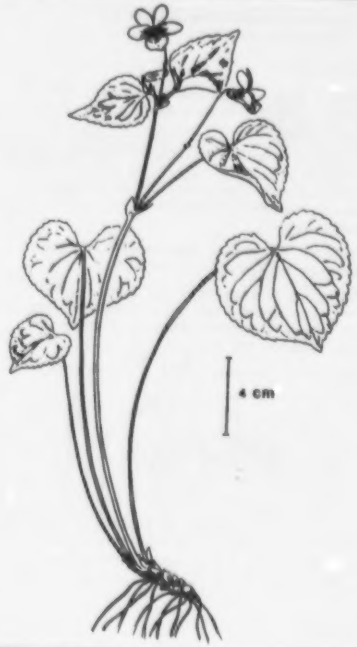
Viola glabella (Yellow wood violet)

HERB - perennial with spreading scaly, fleshy rootstock; flowering stem leafless except on uppermost section.

LEAVES - somewhat kidney-shaped to heart-shaped, serrated, without or more commonly with hairs, basal leaves with long petioles.

FLOWERS - occurring mostly on upper portion of stem, yellow with 3 lower petals purplish-pencilled.



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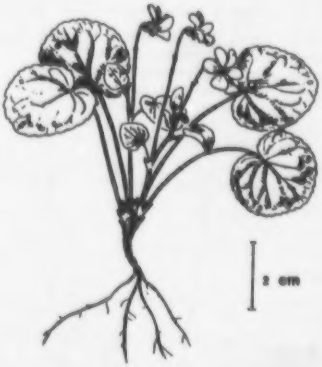
Viola orbiculata (Evergreen yellow violet, Round-leaved violet)

HERB - perennial with flowering stem
ot over 5 cm tall.

EAVES - oval to nearly circular, thin,
errated, often persistent over winter.

LOWERS - lemon-yellow to gold, with 3
ower petals purplish-pencilled.

ABITAT - on alpine and montane slopes
nd in coniferous forests; on hummocks
n SHD sites.



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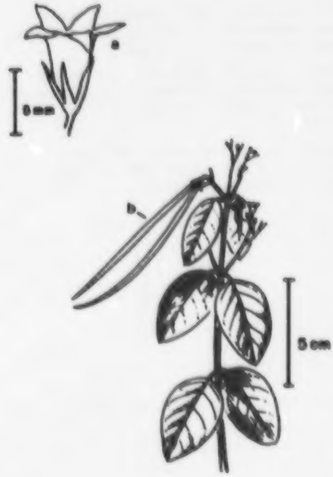
Apocynum androsaemifolium
(Spreading dogbane)



APOCYNACEAE

HERB - freely branched perennial, 2-5 dm tall, stem and leaves exude milky juice when cut.

LEAVES - opposite-paired, drooping, oblong-elliptic to ovate, 2.5-7 cm long with abrupt tooth-like tips; upper surface is smooth, under surface is paler and pubescent.

FLOWERS - terminal and axillary cymes of pinkish bell-shaped flowers (a).

FRUITS - in long, narrow, pencil-like pods (b), seeds are long and narrow with a tuft of long white hairs forming a cottony mass within the pod.

HABITAT - on sandy, well-drained soil.

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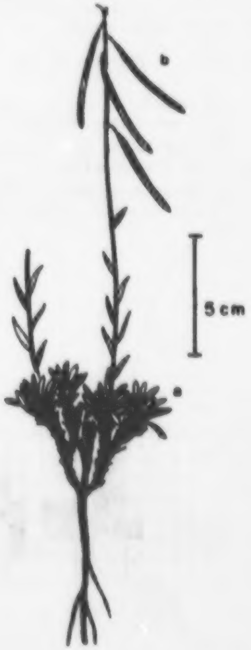
Arabis holboellii (Holboell's rock cress)



BRASSICACEAE

HERB - biennial or short-lived perennial having 1-several stems sometimes branched above, 0.1-1 m tall, with bristly or star-like hairs below becoming smoother above.

LEAVES - **basal leaves form a rosette** (a); blades are 1-5 cm long, 2-7 mm broad, margins smooth to strongly toothed, sparsely to densely hairy; stem leaves, petiolate, linear, often overlap, and becoming sessile above, with or without auricles; have a distinct bitter taste.

FLOWERS - racemes of 20-100 flowers, whitish-pink to pinkish-purple; small.

FRUIT - silique (b) 3-7 cm long, 1.5-2.5 mm broad; first spreading but at length reflexed and pendulous.

HABITAT

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Aralia nudicaulis (Wild sarsaparilla)

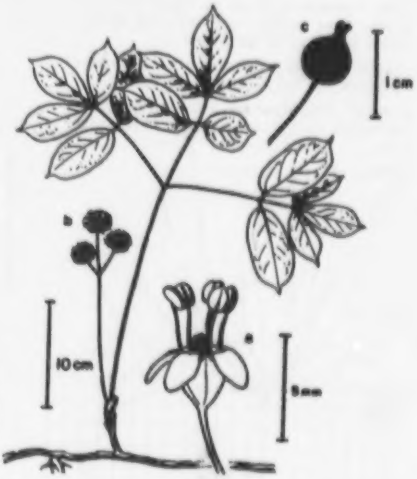
ARALIACEAE

HERB - widely rhizomatous, perennial with stout, erect, woody stems barely reaching soil surface.

LEAVES - generally single, 3-5 dm long, 3 times compound with leaflets pinnately compound and serrated.

FLOWERS (a) flowering stem naked, shorter than leaf and topped with 3-7 umbrella-shaped clusters (b) or balls of greenish white flowers.

FRUIT - dark purple berries (c).



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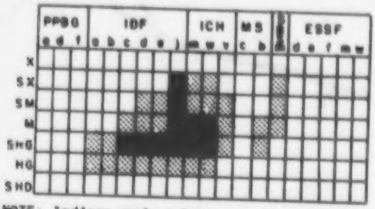


NOTE: Indians made a beverage by boiling the rhizomes, it has similar medicinal properties as the tropical sarsaparilla.

Arenaria capillaris
(Thread-leaved sandwort)

CARYOPHYLLACEAE

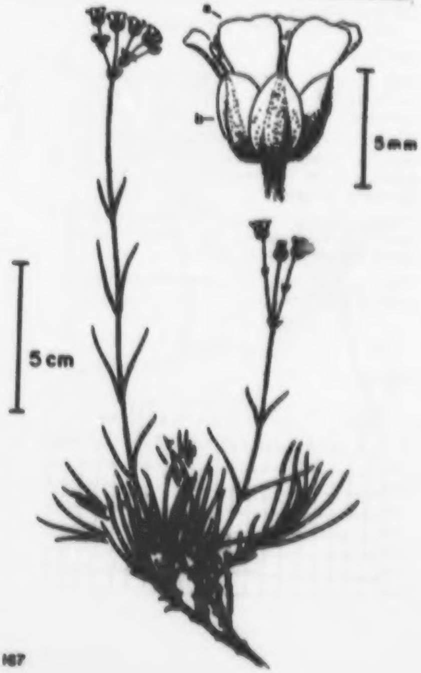
HERB - tufted perennial forming loose mats up to 2 dm broad with numerous flowering stems 5-30 cm tall.

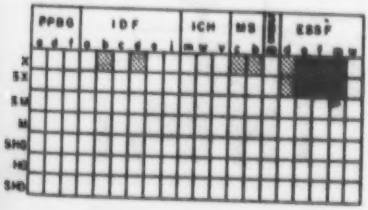
LEAVES - thread-like in dense bundles of needle-like leaves.

FLOWERS - usually few in small open clusters, white, petals (a) about twice as long as the sepals (b); flowers June-August.

FRUIT -ovoid capsule, seeds 2 mm long, flattened.

HABITAT - sagebrush plains to subalpine rocky slopes.





Asarum caudatum (Wild ginger)

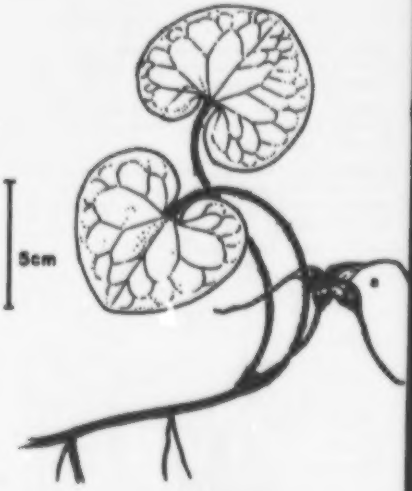
ARISTOLOCHIACEAE

HERB - perennial forming large mats; plants have extensive rootstocks with characteristic ginger odour.

LEAVES - 2 per node, the blades cordate-reniform, 4-10 cm long to 15 cm broad.

FLOWERS - very unique brownish purple to yellowish (a); flared from a bell-shaped base.

FRUIT - fleshy capsule.



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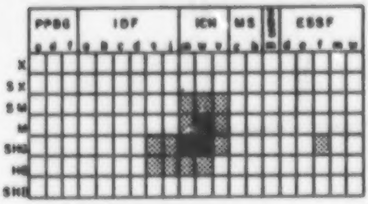


Circaea alpina
(Alpine enchanter's-nightshade)

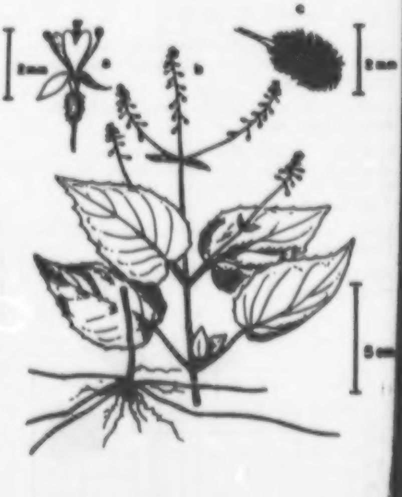
ONAGRACEAE

HERB - perennial from a slender (tuberous) rhizome, 1-5 dm tall, simply to freely branched.

LEAVES - blades heart-shaped to ovate, usually acuminate, pale green, short hairy especially on the lower surface, petioles narrowly winged.

FLOWERS - tiny (a) in terminal racemes (b), petals white to pink, two lobed 1-1.5 mm long, flowers May to July.

FRUIT - 2 mm long (c), covered with soft, hooked bristles.



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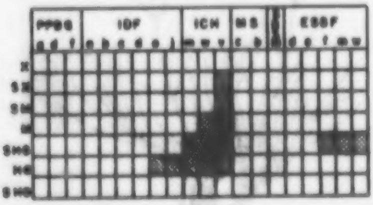


Claytonia perfoliata (Miner's lettuce)

PORTULACACEAE

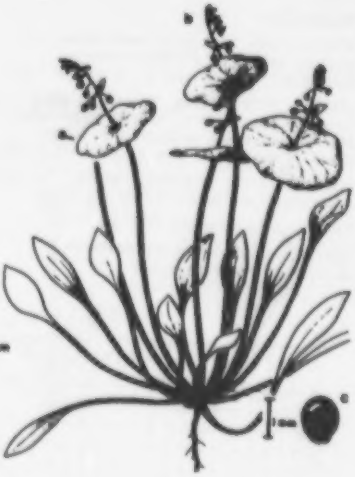
HERB - annual with slender tap root, several basal branches (1) 3-35 cm long.

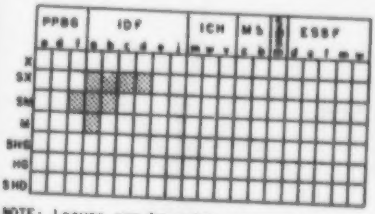
LEAVES - basal, linear to spatulate, long petiolate; stem leaves disc-shaped (0.6-5 cm broad) surround the stem (a).

FLOWERS - several to many, white or pink, in whorled raceme (b) 1-8 cm long, the first flower often with a leaf-like bract; 5 petals, 5 stamens.

FRUIT - black shiny seeds (c).

HABITAT - in sandy open to shady woods at lower elevations.





NOTE: Leaves can be eaten raw or cooked.

Cornus canadensis (Canadian bunchberry)

CORNACEAE

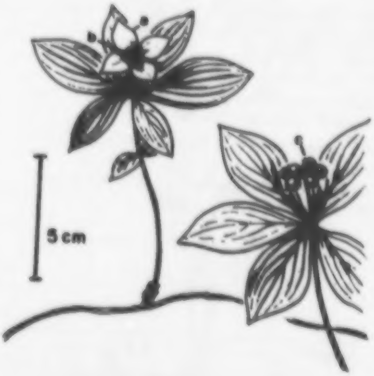
HERB - low, widely rhizomatous, 5-10 cm tall.

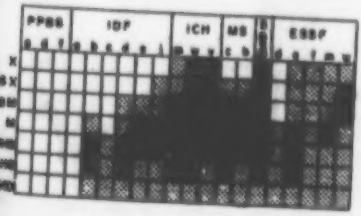
LEAVES - 4-7 in terminal whorl, oval-elliptic, 2-8 cm long, green above, whitish beneath, veins parallel.

FLOWERS - in a solitary condensed cluster with 4 white petal-like bracts (a) surrounding a central cluster of small greenish white to purplish flowers (b).

FRUIT - bright red drupes (c); although slightly pulpy they are sweet, edible.

HABITAT





Dodecatheon pulchellum
(Few-flowered shootingstar)

PRIMULACEAE

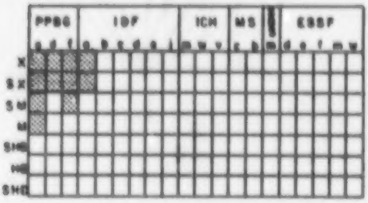
HERB - plants with very short erect rootstocks, smooth to glandular-hairy throughout, flower stalks 0.5-4 dm long.

LEAVES - 2-15 cm long, blades oblanceolate to spatulate, margins smooth to somewhat toothed, narrowed gradually to winged petioles nearly as long as the leaf blade.

FLOWERS - 1-25, 5-merous, purple-lavender, the "tube" yellowish-orange (a).

FRUIT - a capsule (b) 5-15 mm long.

HABITAT - grasslands and mountain meadows to moderate elevations.



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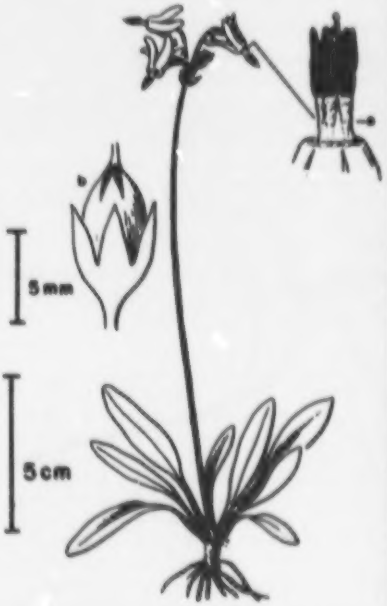


Epilobium angustifolium (Fireweed)

ONAGRACEAE

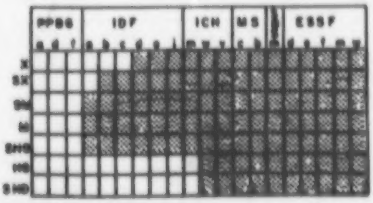
HERB - perennial from rhizome-like roots; stems usually simple, 1-3 m tall.

LEAVES - alternate, narrowly lance-shaped, veins visible on under surface.

FLOWERS - (a) several, rose to purple, in elongated terminal cluster (b).

FRUIT - narrow green to red dehiscent seed pods.

HABITAT - common successional species especially on burned sites.



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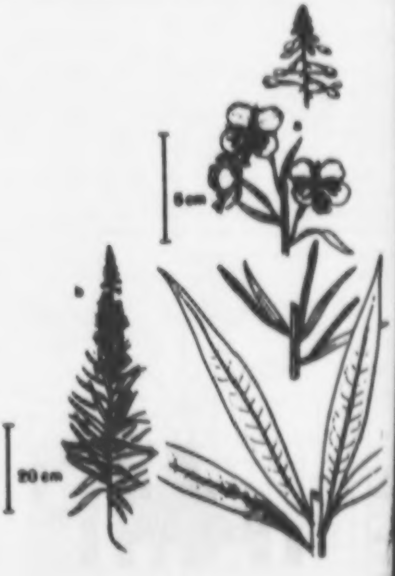
NOTE: Young greens can be used as a potherb or tea.



Eriogonum heracleoides (Wyeth buckwheat, Parsnip-flowered umbrella plant)

POLYGONACEAE

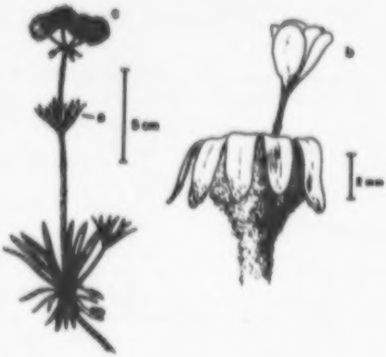
HERB - perennial with a freely branched shrubby base, forming clumps up to 6.0 dm broad and 1-4 dm tall, generally woolly throughout; **the flowering stem has a whorl of leaf-like bracts about midlength** (a).

LEAVES - many, linear to linear-lanceolate, usually acute and narrowed gradually to a slender petiole, usually greyish and woolly on both surfaces.

FLOWERS - (b) in a congested umbel (c), white to creamy-white or yellowish, occasionally pinkish.

FRUIT - an achene.

HABITAT - found in open sites.



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Eriogonum niveum (Snow umbrella plant)

POLYGONACEAE

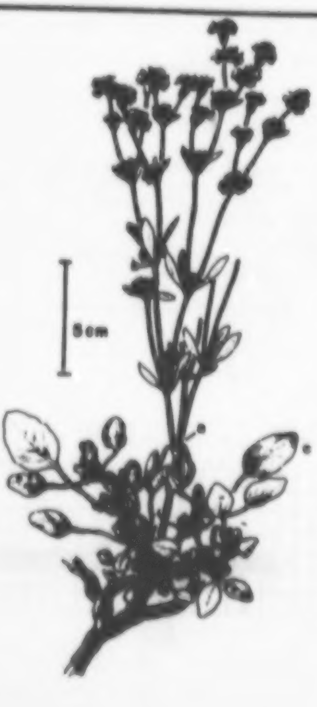
HERB - perennial from a thick woody taproot, freely branching crown and usually 3-forking at lower nodes (a), and 2-forking above (b), growth form is prostrate, mat-forming to erect, 14 cm tall.

LEAVES - greyish-tomentose, tufted, 1.5-6 cm long, blades approximately oblong-ovate to broadly lanceolate (c), usually at least equalled by the slender petiole.

FLOWERS - flowering stem 5-20 cm tall, greyish tomentose, flowers usually creamy or pink, very occasionally yellow; flowers late June-August (to October depending on rainfall).

FRUIT - an achene.

HABITAT - sagebrush desert to Ponderosa pine forest.



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NOTE: Leaves may be confused with those of *Senecio canus* before flowering occurs.

Galium boreale (Northern bedstraw)

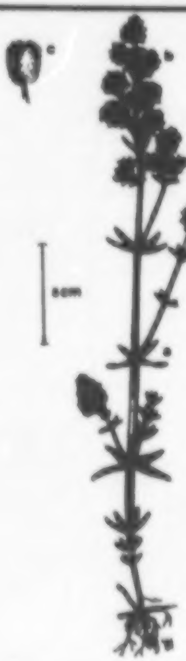
RUBIACEAE

HERB - perennial; mostly 2-8 dm tall with numerous erect, **square stems**, from creeping rhizomes.

LEAVES - **in whorls of four** (a), sessile, lance-shaped or linear leaves with rounded tips, **3-nerved**.

FLOWERS - numerous in terminal cluster (b), white or slightly creamy.

FRUIT - covered with **straight or curly** (not hooked) **hairs** (c).



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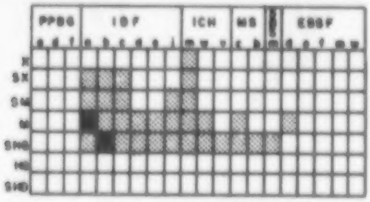


Galium triflorum (Fragrant bedstraw)

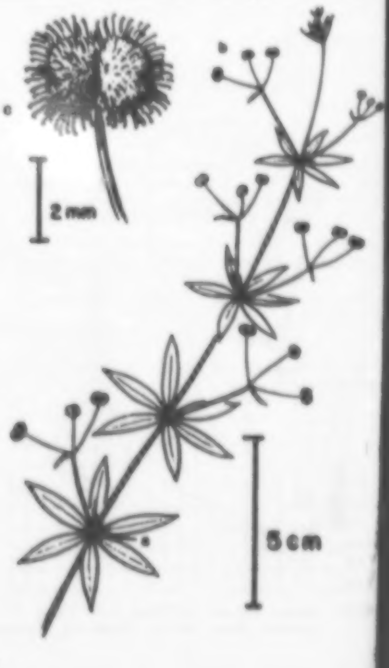
RUBIACEAE

HERB - **perennial stems** 20-80 cm long, **square**, prostrate or **scrambling** on other vegetation.

LEAVES - vanilla scented, **mostly** (5) 6 in **a whorl** (a), 4 on small branches, narrowly elliptic, 1 nerved, with **hooked hairs on underside midrib**.

FLOWERS - in 3's, small, greenish white, arising from axillary peduncles (b).

FRUIT - covered with **hooked bristles** (c).



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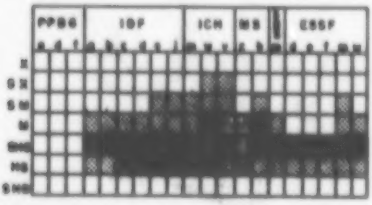


Geocaulon lividum
(Northern red-fruited comandra)

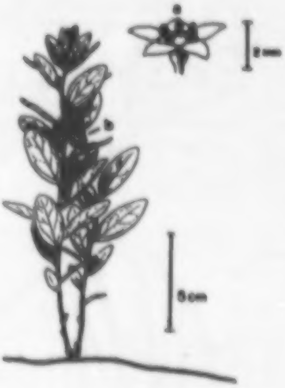
SANTALACEAE

HERB - single stemmed with creeping thread-like, reddish rootstalk, 10-25 cm tall.

LEAVES - thin, oval, blunt-tipped, bright green or yellow-mottled, alternate.

FLOWERS - (a) in slender stalked, 2-4 flowered axillary cluster; usually only centre flower fertile.

FRUIT - succulent, scarlet to fluorescent orange drupe (b); edibility is questionable, not recommended.



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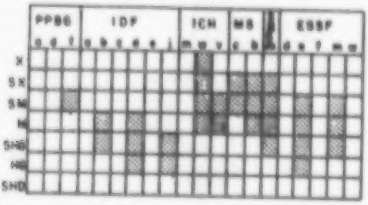

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Geranium viscosissimum
(Sticky purple crane's bill)

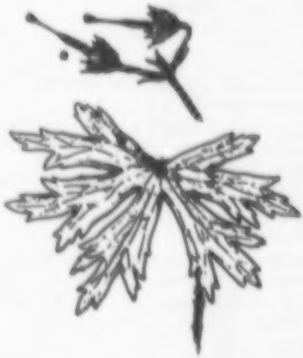
GERANIACEAE

HERB - perennial lightly-haired plant with several stems.

LEAVES - 5-12 cm broad, sticky hairy (glandular), palmately lobed (5 lobes sometimes 7), lobes are sharply toothed.

FLOWERS - petals 14-20 mm long, rounded, pinkish lavender to purplish, finely veined, very sticky.

FRUIT - slender, pointed column (a) with 5 lobes at the base.



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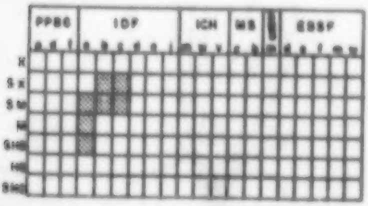

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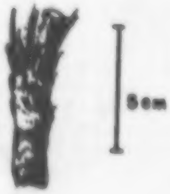


NOTE: *Geranium richardsonii* lacks glandular pubescence and has white flowers.

Ipomopsis aggregata
(Scarlet skyrocket, Scarlet gilia)

POLEMONIACEAE

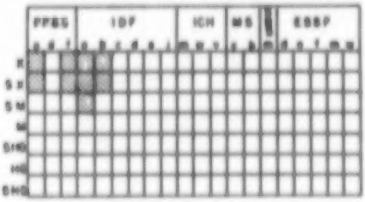
HERB - biennial or short-lived perennial, 2-10 dm tall; 1 or several stems, glandular or with long spreading white hairs on upper stems.

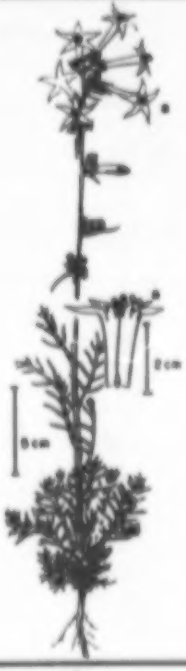
LEAVES - up to 1 dm long, pinnatifid with narrow segments; basal leaves form a deciduous rosette; the stem leaves are gradually reduced upwards.

FLOWERS - bright red (scarlet) trumpet-shaped (a) in an elongate panicle.

FRUIT - seeds, 2.5-4 mm long, shiny when wet.

HABITAT - roadsides and in drier open forests, in southern Okanagan and Similkameen.





Lesquerella douglasii
(Columbia bladderpod)

BRASSICACEAE

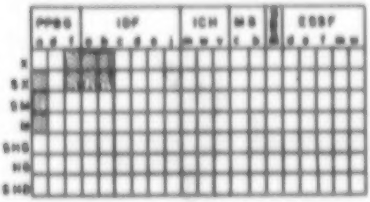
HERB - perennial with a simple caudex, several stems 2-4 dm tall, simple or branched above.

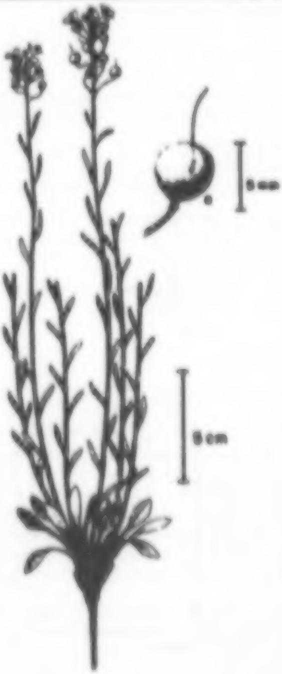
LEAVES - basal leaves are 3-12 cm long, oblanceolate to obovate, 2-15 mm broad, margins smooth to slightly toothed, having slender petiole, usually of equal length to the blade; stem leaves are numerous, usually linear to linear-oblanceolate.

FLOWERS - petals yellow to yellowish-orange, 6-9 mm long; 4 petals.

FRUIT - globe-shaped (a), 3-4 mm long and as broad.

HABITAT





Lewisia rediviva
(Bitterroot Lewisia, Rockrose)

PORTULACACEAE

HERB - low scapose perennial, with showy, delicate flowers; grows from a taproot.

LEAVES - basal, 1.5-5 cm long, fleshy, club-shaped, inconspicuous.

FLOWERS - showy, petals 15 (12-18) white to deep pinkish rose, 2-4 cm long, 30-50 stamens; flowers May to July.

FRUIT - seeds 6-20, disc-shaped, about 2 mm long, shiny and dark brown.

HABITAT - sagebrush plains, in rock crevices, sandy or shallow soils.

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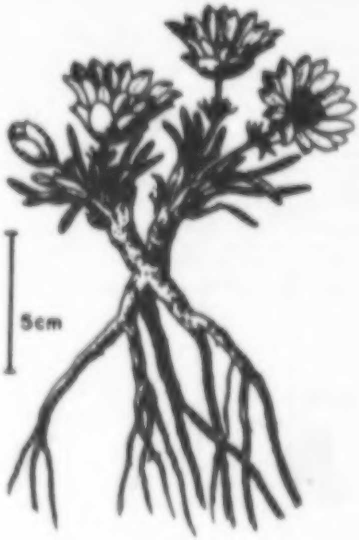

Linum lewisii (Western blue flax)

LINACEAE

HERB - an open plant with mostly unbranched leafy stems, smooth, whitish, with a woody base, perennial, 0.1-6 dm tall.

LEAVES - alternate, linear, 1-3 cm long, 1 veined, acute to rounded at apex.

FLOWERS - on slender pedicels, petals 5, blue, deciduous.

FRUIT - papery capsules on strongly recurved pedicels.

HABITAT

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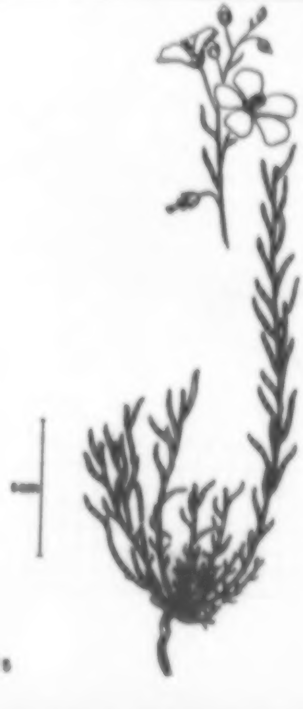


Lithospermum ruderale
(Columbia gromwell)

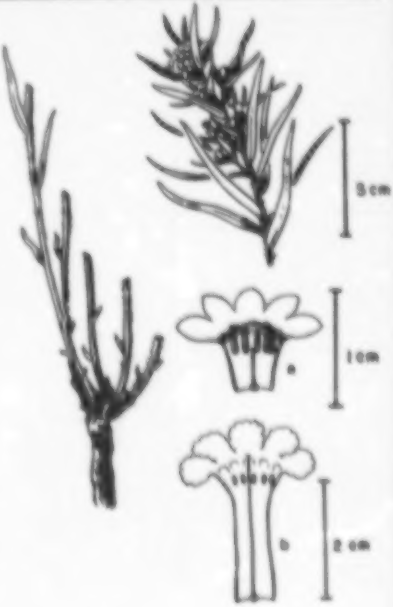
BORAGINACEAE

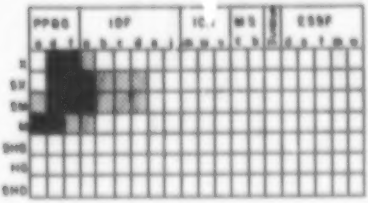
HERB - perennial, rough hairy, 2-6 dm tall, with stems clustered on a coarse woody taproot, stems are very leafy.

LEAVES - all arise from the stem, the lower ones are reduced, the upper are without petioles, crowded, lanceolate to linear, 3-10 cm long, 2-10 mm wide, alternate, leaves bristly hairy.

FLOWERS - in clusters, pale yellow, tinged with green, funnel-like, 8-13 mm long, the tube (a) 4-6 mm long.

HABITAT - open fairly dry places.





NOTE: *L. incisum* is similar but has bright yellow flowers with the tube (b) 15-30 mm long.

Lysichiton americanum
(American skunk-cabbage)

ARACEAE

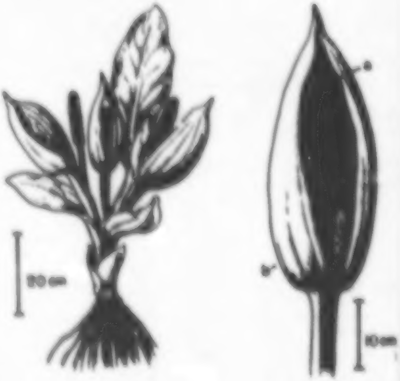
HERB - perennial with short, fleshy, erect, underground stems.

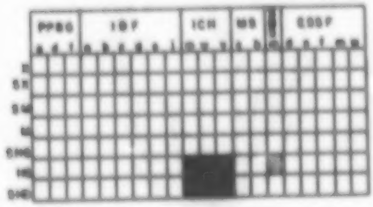
LEAVES - large, 0.3-1.3 m long and 1.7 dm wide, simple, oblong-oval, glossy green, with a skunk-like odour.

FLOWERS - on a spadix (a), yellowish-green; spathe (b) large, yellow.

FRUIT - berry-like and pulpy.

HABITAT - common in swampy soils, pond and lake margins and along streams.





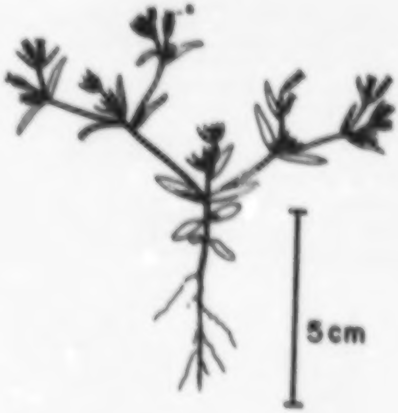
Microsteris gracilis (Pink microsteris)

POLEMONIACEAE

HERB - simple or branched plants, 1-5 cm tall, usually branched only above the middle; annual.

LEAVES - linear to elliptic or lower leaves obovate, up to 5 cm long and 8 mm wide, lower leaves opposite.

FLOWERS - (a) pink, usually in pairs at end of stem and branches.



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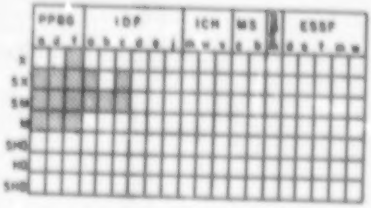


Opuntia fragilis
(Brittle prickly-pear cactus)

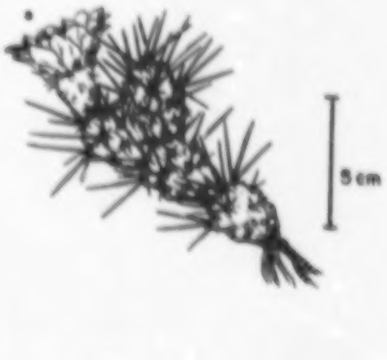
CACTACEAE

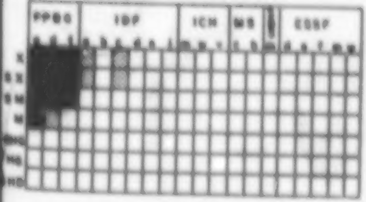
HERB - low matted clump of spiny jointed stems; the individual joins are broadest above the middle, slightly flat, easily detached, spines are 1.3-2.5 cm long, white or pale grey, 1-9 in each cluster.

FLOWERS - 3.8-5 cm wide, near upper ends of joints, yellow or greenish (a).

FRUIT - dry, 2.5 cm long, spinose.

HABITAT - dry open areas.





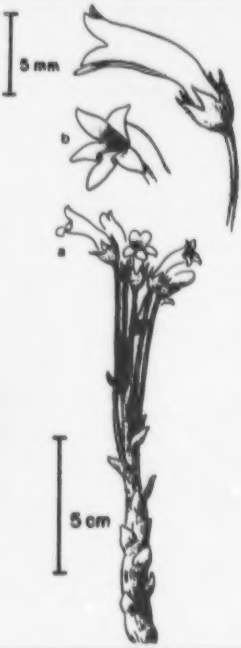
Orobanche fasciculata
(Clustered broomrape)

OROBANCHACEAE

HERB - not green, stems solitary or clustered, scaly, slender to stout, 3-15 cm long, yellowish to purplish, coarsely hairy and glandular throughout.

FLOWERS - 4-10 flower stems 2-15 cm long, sometimes longer than the stem, the lower pedicels often longer than the upper, often forming a flat-topped corymb of flowers (a); flowers are purplish or yellowish, have 2 broad upper lobes and 3 lobes below (b).

HABITAT - open slopes in the foothills and valleys, parasitic on a wide variety of hosts, but particularly on *Artemisia tridentata* and other *Artemisia* spp.



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Phacelia hastata (Silver phacelia)

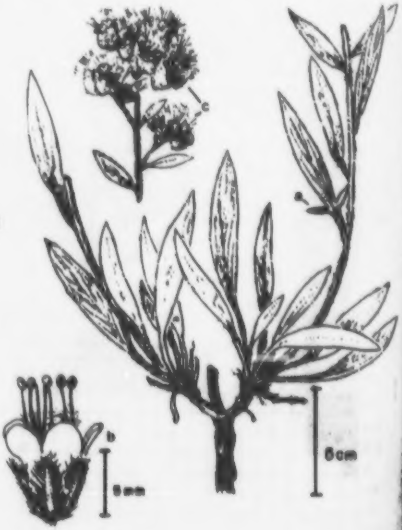
HYDROPHYLLACEAE

HERB - perennial with taproot, usually with several stems prostrate to suberect up to 5 dm tall.

LEAVES - silvery with fine loose hairs; mostly entire but sometimes with a small pair of lateral lobes at the base of the blade (a), basal leaves are tufted, narrowly to broadly elliptic, with petioles; cauline leaves are progressively reduced upward and become sessile.

FLOWERS - (b) white to dull purple, hairy and grouped in thick fuzzy clusters (c).

HABITAT - sandy undisturbed sites, beaches to roadside.



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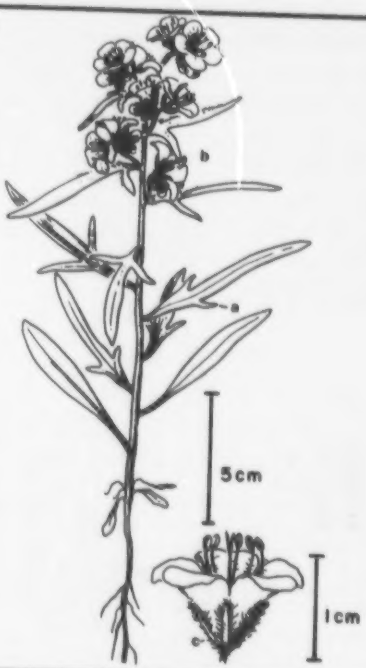
Phacelia linearis (Thread-leaved phacelia)

HYDROPHYLLACEAE

HERB - erect annual, 1-5 dm tall, stems fuzzy, simple to freely branched.

LEAVES - narrow (1.5-12 mm wide), 2-11 cm long, may have a lobe below the middle (a); leaves alternate; lacks basal leaves.

FLOWERS - crowded in upper leaf axils (b), blue to lavender and bell shaped, 1-2 cm wide; sepals narrow and bristly (c).



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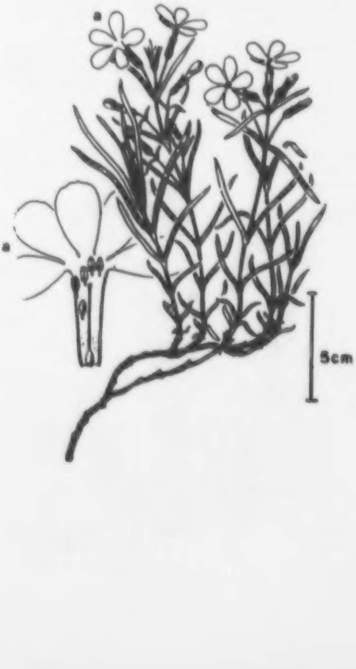
Phlox longifolia (Long-leaved phlox)

POLEMONIACEAE

HERB - perennial from creeping taproot, often branched and creeping below the ground, 1-4 dm tall and often woody at the base.

LEAVES - long and thin, 1.5-8 cm long and 1-2.5 mm wide, with a pungent odour when crushed.

FLOWERS - pink or lavender to white (a), sweet-scented, loosely clustered.



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Plantago patagonica (Woolly plantain)

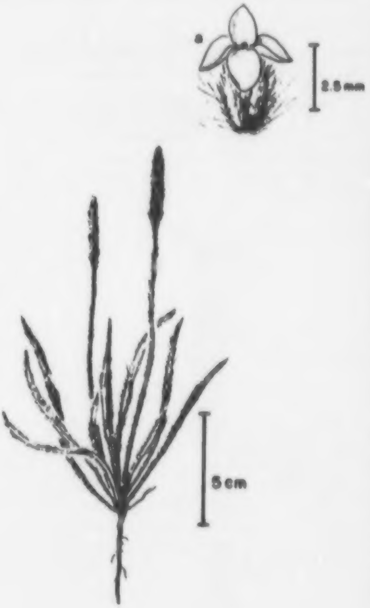
PLANTAGINACEAE

HERB - **small woolly annual**, 5-20 (30) cm tall.

LEAVES - 3-13 cm long, 1-7 mm wide, nearly linear, often 3 nerved, usually woolly.

FLOWERS - small (a) and numerous, borne on a woolly spike 1.5-10 cm long; petals 1.5-2 mm long, cream coloured; 4 long stamens adapted for wind pollination.

FRUIT - 2 seeds, brown, minutely roughened, 2 mm long.



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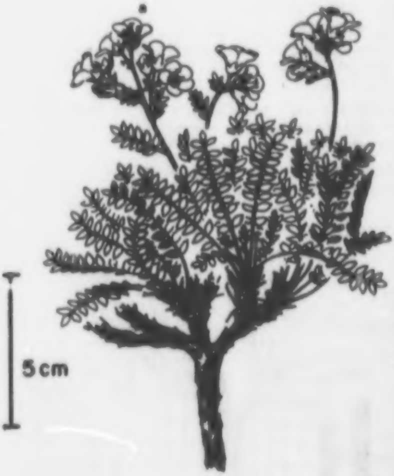
Polemonium pulcherrimum
(Showy Jacob's-ladder)

POLEMONIACEAE

HERB - perennial, 0.5-3 dm tall; a cluster of stems from a branched woody base and taproot.

LEAVES - basal leaves are well developed and often tufted, stem leaves are reduced; leaflets 11-25 per leaf, are opposite or offset.

FLOWERS - a head-shaped cluster of blue, bell-shaped flowers (a).



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Pterospora andromedea (Pinedrops)

MONOTROPACEAE

HERB - **saprophytic** plant, unbranched 0.3-1 m tall.

LEAVES - scale-like leaves (a), yellowish to reddish-brown, **dried stems remaining for one or more years.**

FLOWERS - (b) **pale yellow**, urn-shaped, in an elongated raceme, **flowers 5-8 mm long**, drooping on their stalk.

FRUIT - depressed globes, capsule to 12 mm broad.

HABITAT - deep humus in coniferous forests, especially under pine.

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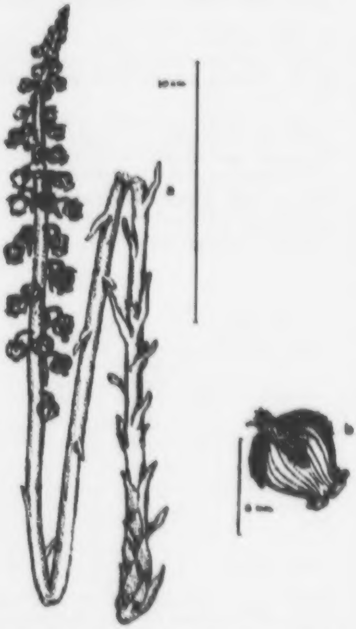

Sedum lanceolatum
(Lance-leaved stonecrop)

CRASSULACEAE

HERB - smooth perennial with numerous sterile shoots and basal rosettes; the flowering stems are 5-20 cm tall.

LEAVES - without petioles, alternate, linear, 5-20 mm long,**very fleshy**, deciduous or withered when plant is flowering.

FLOWERS - (a) in **compact** clusters (cymes); petals yellow, narrowly lanceolate.

FRUIT - a follicle.

HABITAT - open exposed places usually on rocky or gravelly soil.

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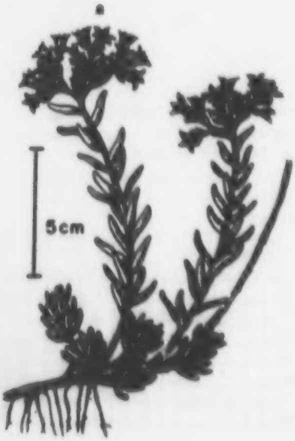


Selaginella densa (Common selaginella)

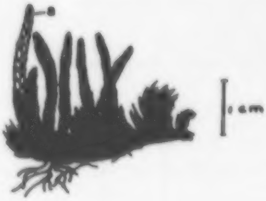
SELAGINELLACEAE

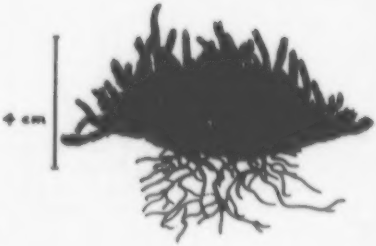
HERB - compactly branched, moss-like plant, forming cushion-mats up to 1 dm or more wide.

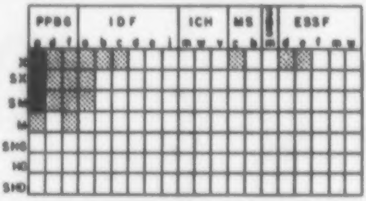
LEAVES - spirally arranged, closely appressed, the blade thick and firm with a groove down the middle of the back, up to 2.5 mm long and 0.5 mm wide.

CONES - four-angled cones sometimes elongated to several cm (a).

HABITAT - exposed often rocky sites.







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NOTE: *Selaginella wallacei* is less compact and has more rounded branches.

Valeriana sitchensis (Sitka valerian)

VALERIANACEAE

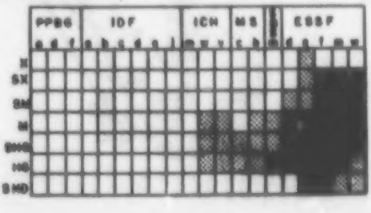
HERB - fibrous-rooted perennial from a stout, branched rhizome, mostly 0.3-1.2 m tall, smooth or occasionally short hairy, rhizomes highly aromatic.

LEAVES - mainly stem leaves, 2-5 pairs of opposite leaves, the lowermost pairs being more or less reduced (a); each leaf consists of up to 5 leaflets mostly toothed, which includes 1 or 2 pairs of smaller lateral leaflets with acute apices, and a terminal leaflet which is larger and often rounded.

FLOWERS - a head of tiny, white or pinkish sweet scented flowers (b).

FRUIT - achene 3-6 mm long with plumose pappus.

HABITAT



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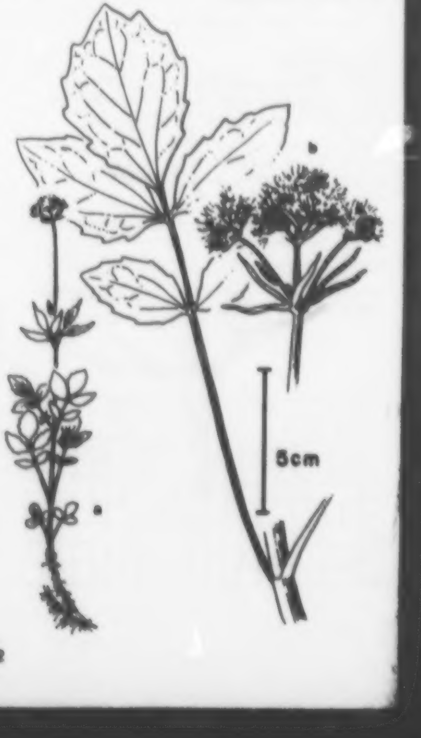
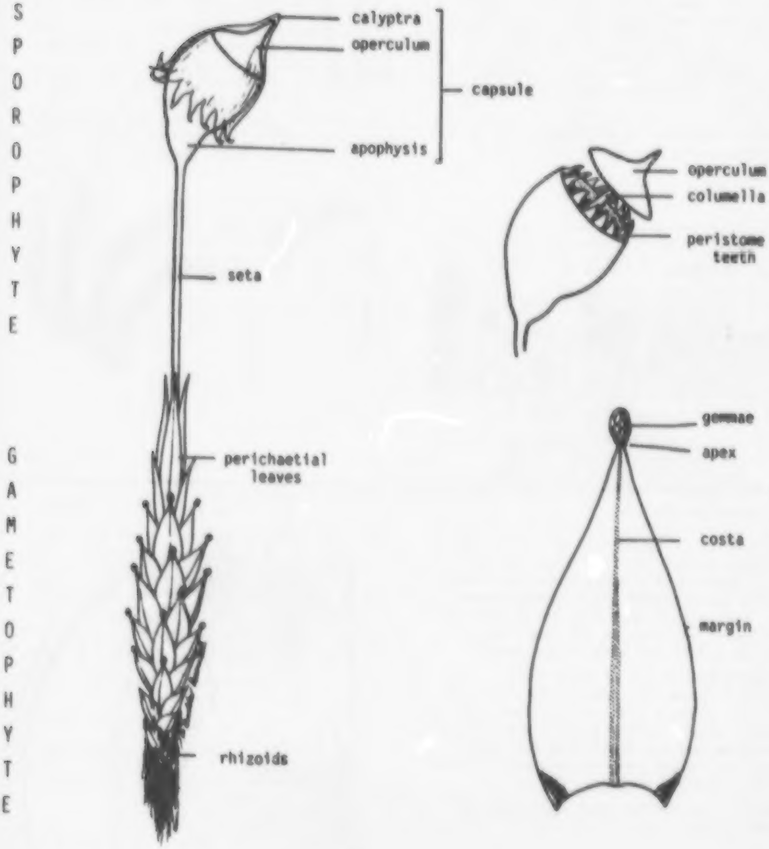


MOSS STRUCTURE

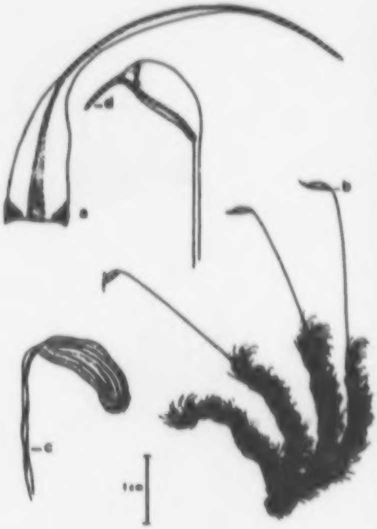

SPOROPHYTE
GAMETOPHYTE
calyptra
operculum
capsule
apophysis
seta
perichaetial leaves
rhizoids
operculum
columella
peristome teeth
gemmae
apex
costa
margin

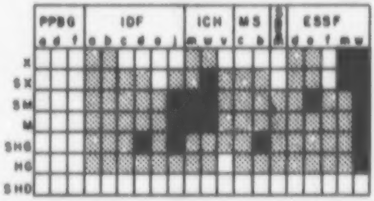
Dicranum fuscescens

GAMETOPHYTE - dark green to light green, slightly glossy, erect unbranched stems, forming loose tufts 1-5 cm deep; stem red-brown; **leaves lance to scythe-shaped** (a), **crisped and curly when dry**, costa forming a keel on back of leaf.

SPOROPHYTE - solitary at tip of main shoot (b); seta yellow to brown, smooth, twisted when dry (c); capsule inclined, grooved and contracted below mouth when dry and mature, cylindrical, curved, brown; **operculum bears a distinctly narrowed snout** (d); peristome teeth red, incurved when dry.

HABITAT - usually on wood, logs, or as an epiphyte, sometimes on forest floor or humus.





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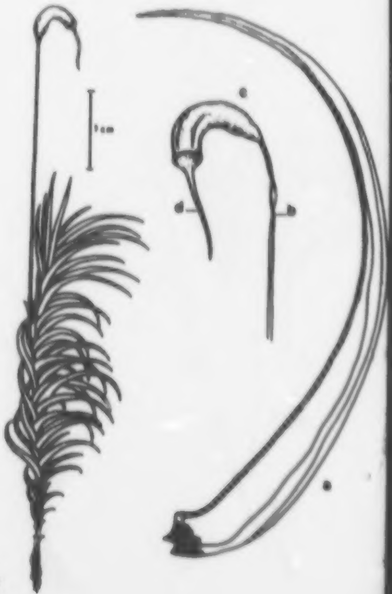
NOTE: *D. tauricum* is a similar but smaller species (1-2.5 cm) with erect capsules and blunt leaf apices.

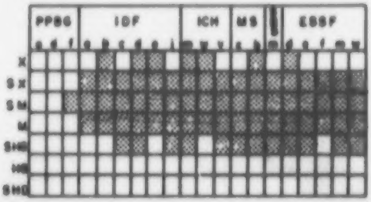
Dicranum scoparium

GAMETOPHYTE - light green to golden-green, strongly glossy, forming loose tufts of erect unbranched plants; stems red-brown, **leaves lance-shaped often scythe-shaped** (a), **not crisped when dry**; costa forming a ridge on the back of the leaf; larger than *D. fuscescens* with longer leaves.

SPOROPHYTE - at tip of main shoots; seta yellow to brownish, smooth, twisted when dry (b); capsule inclined, cylindrical, curved, brown, rarely grooved when dry (c); **operculum bears a distinctly narrowed snout** (d), often red; peristome teeth red-brown, incurved when dry.

HABITAT - on rotten logs, sometimes on forest floor.





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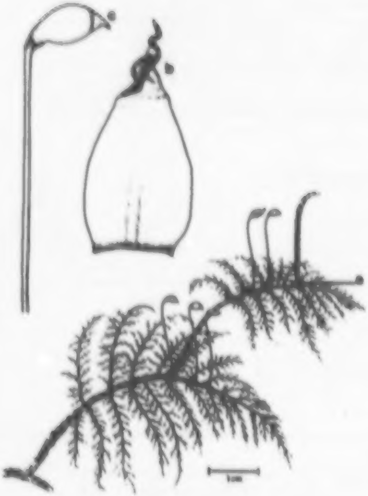
NOTE: *Dicranum polysetum* is similar except it is larger and the leaves are extremely wavy and not as sickle-shaped.

Hylocomium splendens (Step moss)

GAMETOPHYTE - dull yellow to brownish-green, glossy, creeping, with current year's growth arising arched from middle of previous year's growth (a) producing a "step-like" appearance; branches also secondarily branched;stem red, often hairy; branch leaves decreasing in size towards end of branch; stem leaves with ovate twisted tip (b).

SPOROPHYTE - uncommon; seta red, smooth, nottwisted when dry; capsule inclined, oval, brown; operculum conic (c); peristome teeth brown, incurved when dry, double.



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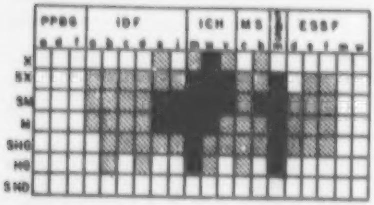


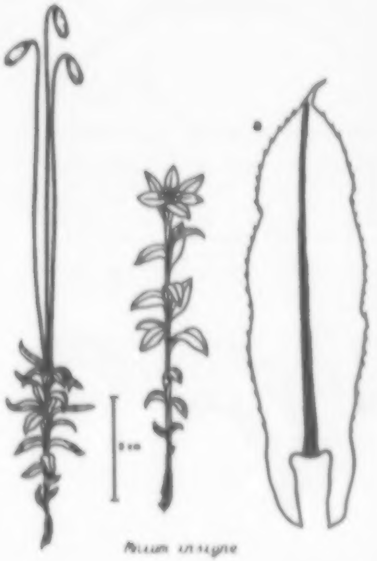
Mnium spp.

GAMETOPHYTE - dark green to pale green erect unbranched plants forming loose turfs or in individual tufts, leaves oblong to oblong ovate to elliptic, margins smooth to doubly toothed.

SPOROPHYTE - various with each species.

COMMON SPECIES

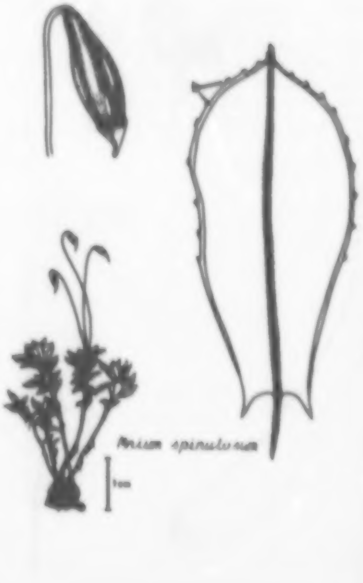
Mnium insigne - leaf margins have single teeth (a), leaves are contorted when dry, sporophytes uncommon; found on moist sites.



Mnium insigne

Mnium spinulosum - leaf margins have double teeth (b), leaves are contorted when dry, sporophytes are common; often on rotten logs or on forest floor.

Mnium nudum - leaf margins are toothless, leaves not (to slightly) contorted when dry, sporophytes uncommon (no line drawing); found on moist sites.



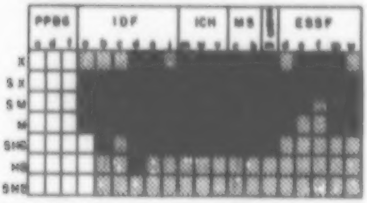
Mnium spinulosum

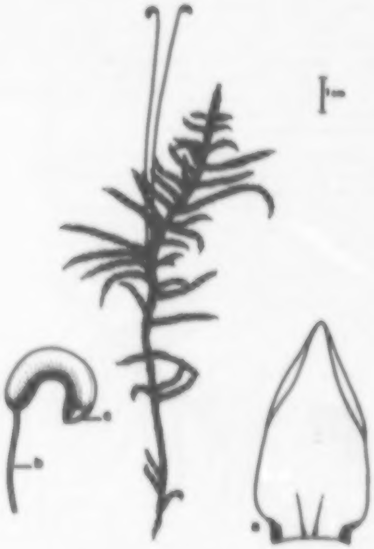
Pleurozium schreberi

GAMETOPHYTE - forming thick mats of creeping to sub-erect, regularly pinnately branched plants, glossy yellow to dull green; stems red-brown; leaves oval (a), branch tips distinctly pointed.

SPOROPHYTE - seta (b) red-brown, smooth, somewhat glossy, twisted to some extent when dry; capsule cylindrical, horizontal and often curved; operculum (c) conic; peristome double, red-brown.

HABITAT - on the forest floor, and decaying wood.



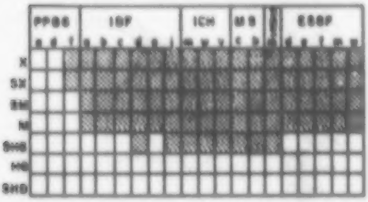


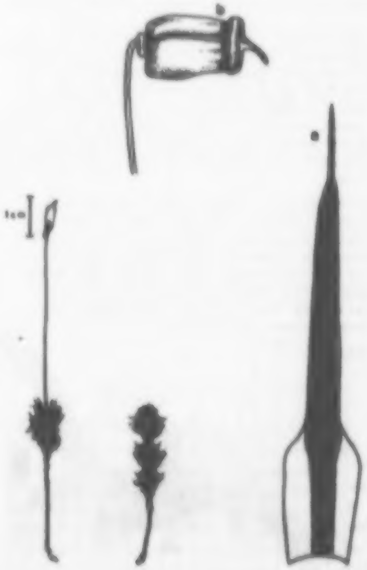
Polytrichum juniperinum

GAMETOPHYTE - dark green to pale bluish-green to red-brown, not glossy except at leaf bases, forming loose to tight tufts of wiry unbranched stems; leaves needle-like, spreading when moist, tightly overlapping when dry, tipped with reddish-brown stiff hair (a); stems red-brown obscured by leaf bases except at base of stem, plants 2-10 cm tall; rhizoids confined to lower part of stem; female plants separate.

SPOROPHYTE - solitary at tips of main stems, seta wiry, red-brown, glossy, not twisted when dry; capsule rectangular to squarish (b), with 4 conspicuous angles.

HABITAT - common on clearcuts, other disturbed sites and on upturned roots.





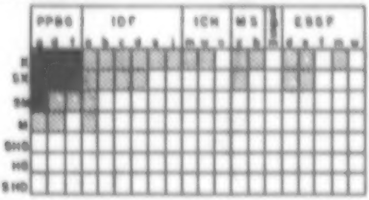
NOTE: *Polytrichum commune* is similar but is larger and not whitish-green in colour.

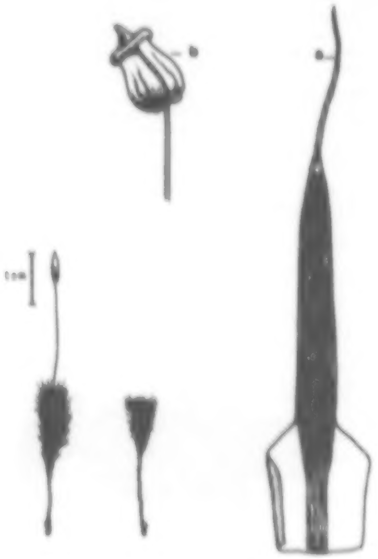
Polytrichum piliferum

GAMETOPHYTE - dark green to bluish-green to red-brown, somewhat glossy, unbranched, wiry, erect stems forming dense tufts; leaves overlapping to spreading, **needle-like, tipped with a conspicuous white hair** (a); stems red-brown but concealed by close-lying leaves; plant 0.5-3 cm tall; rhizoids confined to stem base; male and female plants separate.

SPOROPHYTE - solitary at tip of stem; seta wiry, red-brown, glossy, not twisted when dry; capsule not glossy, pale to deep red-brown, distinctly **four-angled**, squarish to rectangular (b), somewhat inclined when mature, contracted to some extent below mouth when dry; operculum conic to snouted; whitish peristome teeth incurved; calyptra hairy, shed at maturity.

HABITAT



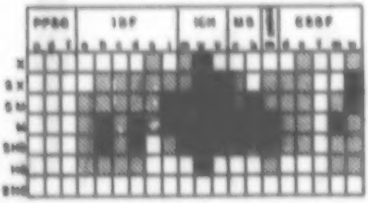


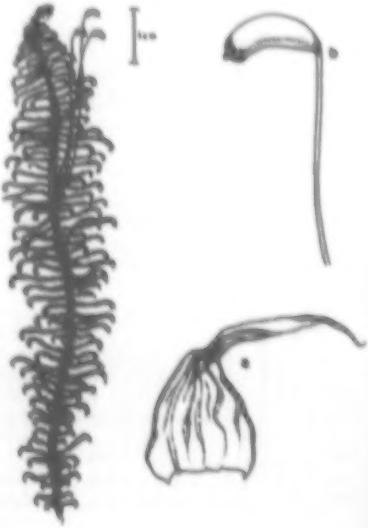
Ptilium crista-castrensis (Feather moss)

GAMETOPHYTE - pale green to yellowish to golden yellow; **regularly pinnately branched, "feather-like" appearance**, near-erect to reclining,often forming soft mats; stems yellowish to pale green; stem leaves are oval, tapering gradually to a sharp point, sickle-shaped (a), pleated and most are oriented to one side of the stem.

SPOROPHYTE - lateral, well behind apex of shoot, usually more than one on each shoot; seta red, slightly glossy, twisted when dry; capsule red-brown, strongly curved when mature (b), contracted below mouth when mature; operculum conic; peristome double, outer teeth dark red-brown, inner colourless.

HABITAT

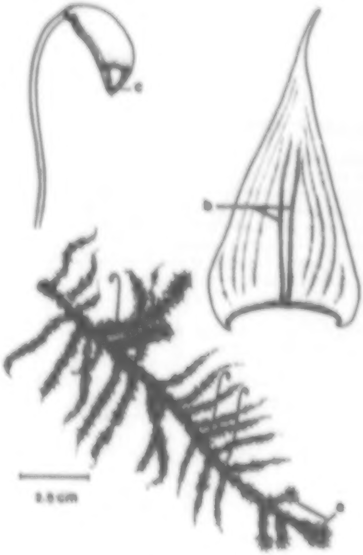




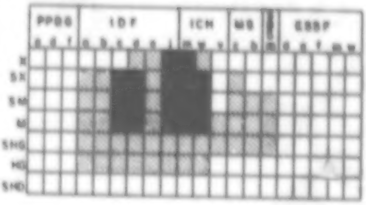
Rhytidiadelphus triquetrus

GAMETOPHYTE - forming thick pale green to yellow-green carpets of creeping irregularly to regularly branched shoots, tips of the main shoots blunt, with a tuft of divergent leaves (a) resembling a dog's paw; stems red-brown; leaves triangular, 6 mm long, shallowly pleated wet or dry; costa double (b).

SPOROPHYTE - seta glossy, somewhat corkscrew twisted when dry; capsule inclined, curved and not glossy; operculum (c) conic; peristome double, outer teeth red-brown.



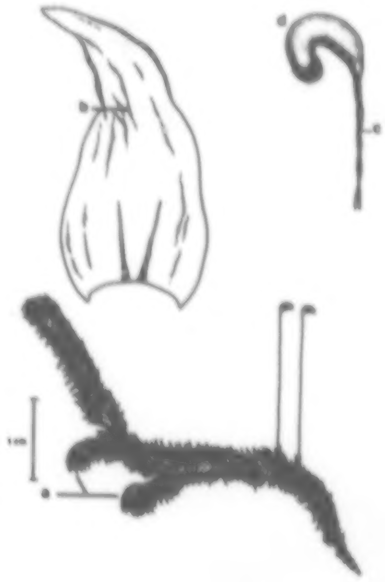
HABITAT



Rhytidiopsis robusta (Pipecleaner moss)

GAMETOPHYTE - irregularly, sparsely branched, creeping stems sometimes forming extensive mats, golden to yellow-green; tips of branches hooked (a) with branches having the appearance of a furred paw; leaves with deep irregular pleats and wrinkles (b), ovalish tapering to a sharp or blunt often serrated tip; stems green to yellowish; plants have a "pipecleaner" appearance.

SPOROPHYTE - located far back from stem tip and perpendicular to it; seta (c) light to dark red-brown, glossy, twisted when dry; capsule (d) strongly curved and inclined; operculum conic; peristome teeth double, pale yellow.



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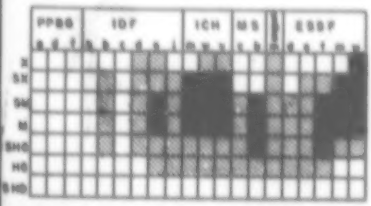

Sphagnum spp. (Peat moss)

GAMETOPHYTE - mostly erect, forming loose to tight mats and tufts; lateral branches many, in conspicuous clusters (a) of 2-5 along the main stem and recurved; terminal branches crowded into a tight head; branch leaf cells appearing as a conspicuous network when observed with a hand lens; pale whitish-green to brilliant red in colour.

SPOROPHYTE - somewhat spherical and terminal capsules.

HABITAT - from shady, swampy and alluvial sites to open bogs, mostly in wet conditions; often forming the dominant ground cover; *Sphagnum* spp. occur from sea-level to subalpine elevations.

	PPBG			IDF						ICH			MS		[illegible]	ESSF				
	a	d	f	a	b	c	d	e	j	m	w	v	c	b		d	e	f	m	w
[illegible]																				
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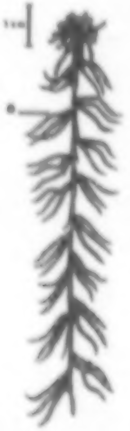
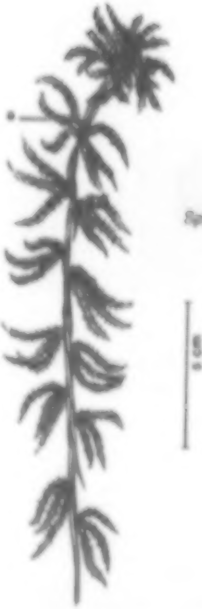


Sphagnum capillaceum



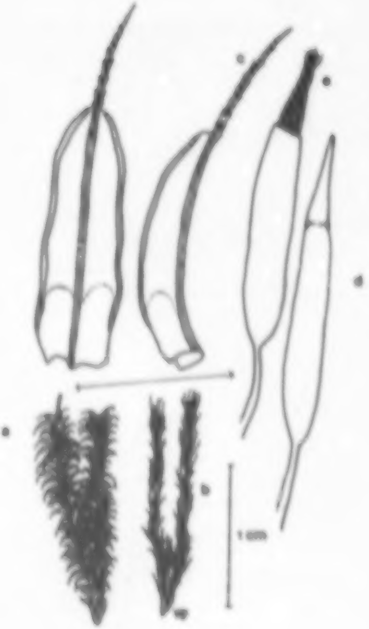
Sphagnum squarrosum

Sphagnum palustre

Tortula ruralis

GAMETOPHYTE - tufted, sometimes forming wide loose mats, usually green to brownish or reddish green; stems 1-8 cm high, often branched, without a central strand; leaves spreading when wet (a), appressed when dry (b), tipped with a fine reddish to white hair (c); male and female plants separate.

SPOROPHYTE - seta 1-3 cm long, reddish; capsule (d) erect and straight to slightly curved, reddish to reddish brown; operculum conic; peristome (e) long and twisted from a high basal membrane.



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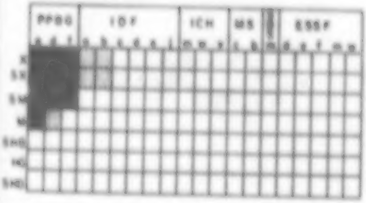


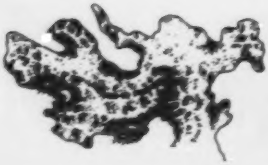
Lichens are not simple plants but instead are a composite of algae cells and fungal threads forming, through symbiosis, a unique organism. The fungus receives food (sugars) from the photosynthetic algae and the algae receive protection (from environmental extremes) from the fungus. Those lichens which contain blue-green algae are able to fix nitrogen.

Lichens are utilized as forage by deer and are important winter feed for caribou. It is for these reasons and their diagnostic importance in certain ecosystems that recognition of several lichens is useful.

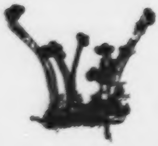
On the basis of growth form characteristics, at least three categories of lichens may be distinguished:

Crustose - scab-like formations directly attached to the substrate (rock, bark, especially important on mineral soil as an anti-erosion agent).

Foliose - leaf-like and lobed. Unlike crustose lichens they usually exhibit a distinct lower surface which is broadly but indirectly attached to the substrate by short "roots" or rhizines.



Fruticose - hair-like, shrubby to stick-like,often growing on branches (hair-like) or on terrestrial substrate (stick-like forms).



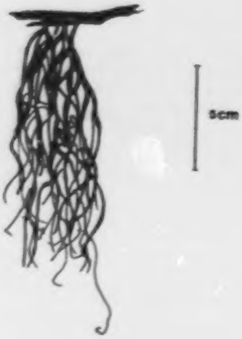
Alectoria sarmentosa

LIFE FORM - fruticose

DISTINCTIVE FEATURES - hair-like mats up to 30 cm long, pendulous and tangled, pale greenish-yellow colour, extreme tips of branches black (use hand lens).

HABITAT - over branches in mesic to moist coniferous forests, especially in ICH and ESSF zones.

NOTE: *Bryoria* spp. are common and are of a similar form but are usually brownish to blackish; they are an important caribou winter food source.

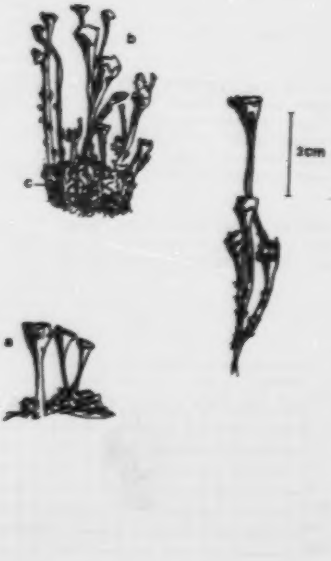


Cladonia spp.

LIFE FORM - fruticose

DISTINCTIVE FEATURES - consisting of hollow upright projections (podetia) ranging in shape from "golf tee-like" (a), to intricate structures composed of many small turrets (b), small leaf-like scales (c) (squamules) are often basal and in some species extend up the podetia.

HABITAT - widespread, does not lend well to ecological interpretations.

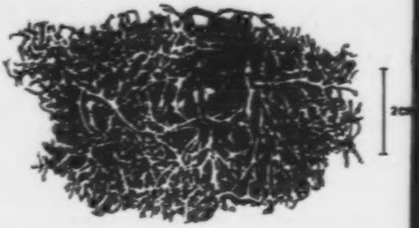


Letharia vulpina

LIFE FORM - fruticose

DISTINCTIVE FEATURES - shrub-like, 5-10 cm long, the branches rather angular, bright sulphur yellow colour, "gritty" to the touch.

HABITAT - over trees in exposed sites, especially in the PPBG and IDF zones, though also locally abundant in the upper ESSF zone.

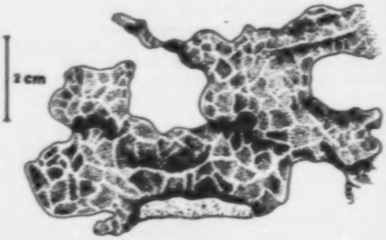


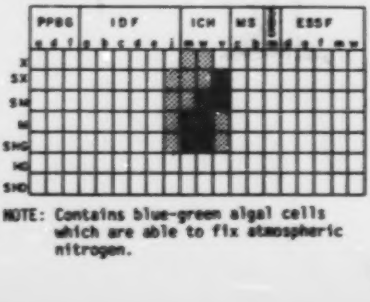
Lobaria pulmonaria

LIFE FORM - foliose

DISTINCTIVE FEATURES - 10-25 cm broad, upper surface lobed, regular pitted and ridged resembling vertebrate lung tissue; upper surface light brownish-green turning bright green when wet, lower surface tan with white mottling.

HABITAT - over trees (and rocks) in humid forests, especially in the ICH, but also in moister parts of IDF.

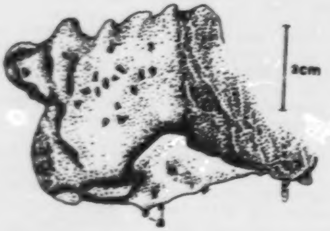




	PPBG			IDF						ICH			MS			ESSF				
	e	d	f	a	b	c	d	e	i	m	w	v	c	b	m	d	e	f	m	w
X										▨	▨									
SX									▨	▨	▨	■								
SM									▨	▨	■	■								
M									▨	■	■	▨								
SHG									▨	■	■	▨								
HG																				
SHD																				

NOTE: Contains blue-green algal cells which are able to fix atmospheric nitrogen.

Peltigera spp.



LIFE FORM - foliose

DISTINCTIVE FEATURES - ranges from a flat widely lobed structure to a semi-vertical highly lobed structure; has distinct upper and lower surfaces with the upper surface ranging from bright green to light grey; the lower surface often has extruding veins and root-like hairs (a) (rhizines) which attach the lichen to the substrate.

HABITAT - on humus, bare soil or moss.

COMMON SPECIES

Peltigera aphthosa - upper surface green (bright green when moist), with dark freckle-like warts; lower surface dirty whitish, the veins pale and indistinct. Common in the IDF, ICH, MS and ESSF zones, less frequently in the AT.

Peltigera canina - upper surface light brown with a whitish lustre when dry, covered with a fine tomentum (woolliness) especially towards the tips. The lobes are generally bent downwards. The lower surface has pale narrow raised veins and long conspicuous rhizines. It is common throughout the region.

Peltigera rufescens - similar to *Peltigera canina* but diminutive; has upturned and smaller lobes, a similar woolly upper surface, more conspicuous veins and dark densely branched rhizines on lower surface. Found on ground in dry open sites especially in the PPBG and IDF zones.

NOTE: Many *Peltigera* spp. contain blue-green algal components thus having the ability to fix atmospheric nitrogen.

APPENDIX I

COLLECTING AND PRESSING PLANT SPECIMENS

Materials:

- polyethylene (plastic) bags; several of the large freezer size and one or two 2' x 3' size.
- newspaper - lots of it.
- plant press; consisting of two wooden backs, two straps or a length of cord and several sheets of corrugated cardboard separators.

Collecting:

Plant specimens should be collected and kept in plastic bags until ready for pressing. This will greatly aid in keeping specimens fresh. In dry weather a small amount of water or damp moss can be included with the specimens to keep them from drying out. Only those specimens collected from the same area or plot should be kept together in the same plastic bag. A sheet of paper with the plot number or sample location should be included in each bag of specimens.

Plant collecting is best done in dry weather, although in many areas of the province the field seasons are anything but dry, and in which case the best must be made of the existing situation. Plants collected in wet weather have a relatively higher content of water and will take proportionally longer to dry in the press. Also, if not handled properly the specimens could become mouldy and discoloured. **Generally, the faster the drying the better the plant is preserved.**

A plant specimen should include all those plant parts which are necessary for its proper identification. Herbaceous plants should include at least part of the stem, leaves, fruit, flowers and, if possible, part of the root system. **Special attention should be made to collect a specimen which best represents as many of the plant features as possible.** Grasses, sedges, and rushes require that at least part of the root system be included. In collecting mosses attention should be given to collecting specimens with both gametophyte and sporophyte if present, and similarly in collecting lichens, both the vegetative part and fruiting body should be included. Tree and shrub specimens should include twigs, leaves, flowers or catkins as well as a description of the whole plant. When collecting all but the larger plants, care should be taken in keeping the plant intact. This will avoid getting parts of one plant confused or mixed with another.

With each specimen the following data should be collected:

- location where the specimen was growing -- if collected in a vegetation plot the plot number is sufficient; otherwise,as accurate a location description as possible is required.
- date specimen was collected.
- collectors name.
- habitat description -- needed for those specimens not collected in vegetation plots -- such information as moisture status, wet to dry; aspect; whether on a disturbed site or not; whether shaded or not; etc. -- for mosses, regardless of whether they were collected in a vegetation plot or not, a substrate description is required, i.e. whether it was growing on humus, rotting wood, mineral soil, on rock, etc.
- a description of those plant features which may change during pressing, flower colour being a good example.

Pressing:

Each specimen is laid in a folded sheet of newspaper and arranged such that it will fit on an 11" x 16" sheet of paper (the size commonly used in mounting specimens in most herbaria). Long specimens may have to be folded or cut in order to accommodate them in the press. Data collected with the specimen should be written along the margin of the newspaper to avoid loss of data. Also, to avoid confusion,no more than one species (one type of plant) should be pressed in a folder, although several specimens of the same species from the same location can be pressed in the same folder.

The press is made up as follows -- on one of the wooden backs is laid a cardboard separator, then a specimen in its newspaper folder, then another cardboard separator, then another specimen and so on until all the material to be pressed is in (Figure 3). A second wooden back is then placed on top and the whole bundle is bound together with either a pair of straps or a length of cord. **The press should be opened and inspected daily and the dried specimens removed.** During the inspection of the press material, if it is noted that any of the folders are damp or wet they should be replaced with dry newspaper making sure to transfer all the data onto the new newspaper sheet.

Moss and lichen specimens generally are not pressed but are kept in small paper bags or paper envelopes. The collection data is recorded on the outside of the bag or envelope.

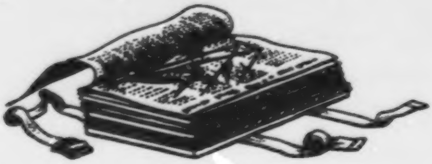


FIGURE 3

Generally, the faster the drying the better the press. When plants are dried quickly, there is less chance of mildew or mould occurring. In good weather the press can be placed in a sunny and draughty location during the day and brought in in the evening. During the periods of poor weather, the press can be placed near a stove or heater, being careful that the press does not receive so much heat that both it and the specimens become scorched. It is important that air flow freely around the press and through the corrugations in the cardboard. This is best achieved by placing the press on its long edge and raising it off the ground (Figure 4).

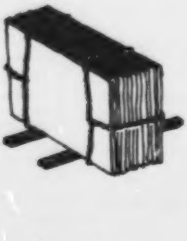


FIGURE 4

Storing:

Dried specimens in their labelled newspaper folders should be kept in a cardboard box (preferably one with a lid to keep out dust and rodents) and stored in a cool dry place.

REFERENCE: Much of the information in this section was taken from: Museum Methods Manual #1 - "Plant Collecting for the Amateur" by T.C. Brayshaw.

Appendix II

LIST OF LOW WOODY SPECIES AND SPECIES OF DOUBTFUL LIFEFORM ASSIGNED TO THE HERB (C) LAYER

This list includes woody species (indicated with *) as well as herbaceous species often considered as low shrubs:

*Andromeda polifolia**

Anemone multifida
Apocynum androsaemifolium
Apocynum cannabinum
Apocynum pumilum
Apocynum sibiricum

*Arctostaphylos alpina**
*Arctostaphylos rubra**
*Arctostaphylos uva-ursi**

Aruncus dioicus

Asclepias ovalifolia
Asclepias speciosus

*Cassiope lycopodioides**
*Cassiope mertensiana**
*Cassiope stelleriana**
*Cassiope tetragona**

Chamaerhodos erecta

*Chimaphila menziesii**
*Chimaphila umbellata**

Comandra umbellata

Cornus canadensis
Cornus suecica
Cornus unalaschkensis

Draba spp.

Dryas drummondii
Dryas integrifolia
Dryas octopetala

*Empetrum nigrum**

Eriogonum androsaceum
Eriogonum flavum
Eriogonum heracleoides
Eriogonum niveum
Eriogonum ovalifolium
Eriogonum pauciflorum
Eriogonum umbellatum

Fragaria chiloensis
Fragaria vesca
Fragaria virginiana

Galium boreale

*Gaultheria humifusa**
*Gaultheria hispidula**
*Gaultheria ovatifolia**

Geocaulon lividum

*Kalmia microphylla ssp. microphylla**

*Linnaea borealis**

Lithospermum incisum
Lithospermum ruderale

*Loiseleuria procumbens**

*Luetkea pectinata**

Orthilia secunda

*Penstemon davidsonii**
*Penstemon ellipticus**

Phlox caespitosa

*Phyllodoce empetriformis**
*Phyllodoce glanduliflora**

Polygonum cuspidatum
*Polygonum paronychia**
Polygonum polystachyum
Polygonum sachalinense

Pyrola spp.

*Rhododendron lapponicum**

Rubus arcticus
Rubus chamaemorus
Rubus lasiococcus
*Rubus nivalis**
Rubus pedatus
*Rubus ursinus**

*Salix arctica**
*Salix cascadensis**
*Salix polaris**
*Salix reticulata**
*Salix stolonifera**

Saxifraga bronchialis
Saxifraga cespitosa
Saxifraga flagellaris
Saxifraga oppositifoli
Saxifraga tricuspidata

Sibbaldia procumbens

*Vaccinium caespitosum**
*Vaccinium oxycoccus**
*Vaccinium scoparium**
*Vaccinium vitis-idaea**
Vaccinium myrtillus

APPENDIX III

Biogeoclimatic Zones and Subzones in the Kamloops Region

Zone	Subzone
PPBG - Ponderosa Pine-Bunchgrass	PPBGa - Very Dry Northern Shrub-Steppe Ponderosa Pine-Bunchgrass
	PPBGd - Very Dry Northern Forested Ponderosa Pine-Bunchgrass
	PPBGf - Very Dry Southern Forested Ponderosa Pine-Bunchgrass
IDF - Interior Douglas-Fir	IDFa - Very Dry Submontane Interior Douglas-fir
	IDFb - Very Dry Montane Interior Douglas-fir
	IDFc - Dry Submontane Interior Douglas-fir
	IDFd - Dry Western Montane Interior Douglas-fir
	IDFe - Subcontinental Interior Douglas-fir
	IDFj - Semi-moist Interior Douglas-fir
ICH - Interior Cedar-Hemlock	ICHm - Western Moist Interior Cedar-Hemlock
	ICHw - Western Wet Submontane Interior Cedar-Hemlock
	ICHv - Western Wet Montane Interior Cedar-Hemlock
MS - Montane Spruce	MSc - Very Dry Southern Montane Spruce
	MSb - Dry Montane Spruce
SBS - Sub-Boreal Spruce	SBSm - Moist Sub-Boreal Spruce
ESSF - Engelmann Spruce-Subalpine Fir	ESSFd - Very Dry Southern Forested Engelmann Spruce-Subalpine Fir
	ESSFe - Dry Southern Forested Engelmann Spruce-Subalpine Fir
	ESSFf - Subcontinental Forested Engelmann Spruce-Subalpine Fir
	ESSFm - Moist Central Forested Engelmann Spruce-Subalpine Fir
	ESSFw - Wet Central Forested Engelmann Spruce-Subalpine Fir

GLOSSARY

achene - a dry, one seeded, thin walled, indehiscent fruit, e.g. *Taraxacum* spp. (Dandelion)

acuminate - tapering to a slender point

adnate - fusion of unlike organs, as stipules adnate to the petiole.

alternate - usually of leaves, alternating at different levels on opposite sides of the stem, not opposite or in whorls (see page 208).

annual - a plant completing its life cycle in a year or less.

anther - the terminal part of a stamen which bears the pollen (see page 204).

apex - the tip of an organ.

apical - at the tip or top of an organ or plant.

apiculation - an abrupt slender tip or point which is not stiff.

appressed - lying tightly against another organ.

ascending - growing obliquely upward, or upcurved.

axil - the point of the angle formed by the leaf or petiole with the stem.

axillary - located in or arising from an axil.

basal - situated at, or pertaining to, the base.

beak - a prolonged, slender tip on a thicker organ such as a fruit or seed.

berry - fleshy fruit with a pulpy interior with no stony layer, usually several to many seeded, e.g. *Vaccinium* spp.

blade - the expanded part of a leaf or petal.

bract - a specialized leaf from the axil of which a flower arises; any reduced or modified leaf associated with an inflorescence.

bracteate - having bracts.

bristle - a stiff hair or any similar outgrowth.

bulb - an underground leaf-bud composed of concentric fleshy scales developed as a food storage organ (e.g. onion).

callus - a hard or tough swollen area (e.g. the swollen nodes of the rachilla in Poaceae).

calyx - all the sepals of a flower, collectively.

capsule - a dry, dehiscent fruit composed of more than 1 carpel, or the spore bearing portion of a moss sporophyte.

carpel - a specialized leaf which forms either all or part of a pistil.

chaff - thin, dry scales.

ciliate - with marginal hairs.

clasping - partly surrounding another organ (e.g. a leaf clasping a stem).

cleft - cut about halfway to the midrib or base, or a little deeper; deeply lobed.

compound leaf - one with 2 or more leaflets (see page 207).

concave - shallowly hollowed; saucer-like.

conic - cone-shaped.

connate - fusion of like organs, e.g. leaves fused around the stem.

cordate - heart-shaped.

corm - the bulb-like but solid fleshy base of a stem (e.g. *Erythronium* spp.)

corolla - all the petals of a flower, collectively.

costa - the midrib of a moss leaf.

crenate - provided with round teeth (compare serrate) (see page 207).

crisped - irregularly curled or hooked; referring to leaves which, when dry, become very twisted and contorted.

culm - the aerial stem of a grass or sedge.

deciduous - falling from the plant after completion of the normal function.

decumbent - reclining on the ground with the end ascending.

decurrent - leaf bases which continue along the stem as wings or lines.

dehiscent - opening at maturity; opening spontaneously when ripe along regular lines of suture.

deltoid - shaped like an equilateral triangle.

depressed - flattened.

dichotomous - branching by constantly forking in pairs.

dimorphic - of two forms.

discoid - resembling a disc; in Asteraceae, denoting a head composed of tubular (disc) flowers only (see page 206).

disc - in the Asteraceae, the central part of the head, composed of tubular (disc) flowers (see page 206).

dissected - divided into narrow segments.

divergent - spreading away from each other.

dorsiventral - a structure having a clear differentiation of a back and front or upper and lower side.

drupe - a fleshy or pulpy berry with a single hard or bony seed.

drupelet - a small drupe, as one in the cluster forming the fruit of the raspberry.

elliptic - oval in outline, narrowed to the rounded ends and widest at or about the middle.

entire - not toothed or otherwise cut.

epiphyte - a plant which grows on other plants, but not parasitically.

fleshy - thick and juicy, succulent.

flexuous - curved in first one direction, then the opposite.

floret - a small flower; the flower of a grass and the 2 immediately enclosed bracts, i.e. the lemma and palea.

foliolate - having leaflets (as in trifoliolate).

follicle - dry fruit from a single carpel that dehisces along one side only.

frond - a leaf, especially of a fern.

gametophyte - the sexually reproducing portion or generation of a plant; in mosses the conspicuous leafy body of the plant (see page 183).

glabrous - smooth, without hairs or glands.

gland - a spot on the surface of an organ or at the end of a hair which produces a sticky or greasy substance.

glandular - having glands.

head - a dense cluster of sessile or subsessile flowers (or fruits) on a very short axis or receptacle, e.g. Asteraceae.

herb - a plant, either annual, biennial, or perennial, with the stems dying back to the ground at the end of the growing season.

herbaceous - pertaining to a herb; leaf-like in texture and colour; or not woody.

hip - (of a rose) a floral cup that usually becomes enlarged and fleshy at fruiting time, the true fruits are the achenes inside.

imperfect - a flower lacking either stamens or pistils.

incised - rather deeply and sharply (and often irregularly) cut.

inclined - leaning over (referring to moss capsule orientation), the capsule oriented at an obtuse or right angle to the seta.

indehiscent - not dehiscent, remaining closed at maturity.

indusium - (indusia-collective term) - an outgrowth covering and protecting a sorus, (see fern diagram page 54).

inflorescence - the flowering structure of a plant.

infrastipular - below the stipules; in the case of *Rosa nutkana*, a pair of thorns at the base of the axils of main branches.

internode - the part of a stem between 2 adjacent nodes.

involucre - a set of bracts beneath an inflorescence; any set of structures which surrounds the base of another structure.

irregular flower - is bilaterally symmetrical i.e. the left half is a mirror image of the right.

lanceolate - lance-shaped (see page 207).

lax - loose, often used for a soft open inflorescence or for soft drooping stems on foliage.

leaflet - one of the divisions of a compound leaf.

legume - the fruit of a member of the Fabaceae, composed of a single carpel, typically dry and dehiscing down both sutures; a plant belonging to the family Fabaceae.

ligulate - tongue-shaped; provided with or resembling a ligule.

ligule - in grasses, the main collar-like appendage on the inside of the blade at the junction with the sheath; in the Aster family, the strap-shaped white or coloured part of a ray corolla.

lip - the odd petal of an orchid; or each of the upper and lower divisions of a bilabiate (2 lipped) corolla or calyx (see page 204).

lobe - a projecting segment of an organ.

marginal - at the edge of the leaf blade.

-merous - a suffix commonly referring to the number of parts in each circle of the floral organs, e.g. 3-merous means 3 sepals, 3 petals, etc.

nectariferous - nectar-bearing.

node - a place on the stem where a leaf is attached.

nut - a hard, dry, indehiscent, one-seeded fruit, larger and firmer walled than an achene.

oblanceolate - lanceolate, with the broadest part toward the apex.

oblong - longer than broad, with the sides nearly parallel or somewhat curving (see page 207).

obovate - the reverse of ovate, the terminal half broader than the basal.

obtuse - blunt, rounded.

operculum - in mosses the lid of the capsule (see page 183).

orbicular - circular in outline

oval - broadly elliptic.

ovary - the part of the pistil that contains the ovules (young seeds).

ovate - egg-shaped, attached at the wide end.

palate - a raised part of the lower lip of a corolla, partly or wholly closing the throat.

palea - the upper bract of the pair which encloses the grass flower, this bract being enclosed by a larger lower bract or lemma.

palmate - with 3 or more lobes or veins or leaflets or branches arising from a common point.

panicle - a branching inflorescence, with the younger flowers at the apex or centre.

papillae - short, rounded, blunt projections.

pappus - an outgrowth of hairs, scales or bristles from the summit of the achene of many species of the Asteraceae (e.g. *Agoseris*)

pedicel - (see page 205) the stalk to a single flower of an inflorescence, also a stalk to a grass spikelet. Compare with "peduncle".

peduncle - the stalk of an inflorescence or of a solitary flower.

pedunculate - borne on a peduncle.

perennial - a plant that lives more than 2 years.

perfect - referring to a flower that has both stamens and pistils.

perianth - the sepals and petals (or tepals) of a flower, collectively).

perigynium - a special bract which encloses the achene of *Carex* spp.

peristome - the apical opening of the moss capsule through which spores are shed, often ringed by peristome teeth.

persistent - remaining attached after the normal function has been completed.

petal - one of the divisions of the corolla, generally coloured or white serving to attract pollinators.

petiolate - with a petiole.

petiole - a leaf stalk.

pinnae - the primary divisions of a compound leaf (see page 54).

pinnate - with 2 rows of lateral branches or appendages, or parts along an axis, like barbs on a feather (see page 54 and page 207).

pinnatifid - deeply cut in a pinnate fashion (see page 54).

pinnipalmate - intermediate between pinnate and palmate, as the venation of some leaves in which the first pair of lateral veins are much larger than the others.

pinnule - a division of pinna (singular form of pinnae); an ultimate leaflet of a leaf which is pinnately 2 or more times compound (see fern diagram page 54).

pistil - the female organ of a flower, composed of one or more carpels, and ordinarily differentiated into stigma, style and ovary.

pod - any kind of dry, dehiscent fruit.

prostrate - flat on the ground.

pubescent - bearing hairs of any sort.

raceme - an elongate flower-cluster with each flower pedicellate and the youngest flowers at the apex.

rachis - a main axis, such as that of a compound leaf (see page 54).

radiate - in the Asteraceae, having the marginal flowers of the head ligulate and the central ones tubular.

ray - the ligule or ligulate flowers in the Asteraceae; one of the branches of an umbel.

receptacle - the portion of the floral axis on which the flower parts are borne; in the Asteraceae, the expanded end of the peduncle to which the flowers of the head are attached.

regular - referring to flowers in which the members of each circle of parts (or at least the sepals and petals) are similar in size, shape and orientation.

resinous - containing or producing a sticky aromatic substance.

reticulate - forming a network, as the veins of a leaf.

retuse - with a small terminal notch in an otherwise rounded or blunt tip.

rhizoid - a structure of rootlike form and function.

rhizomatous - bearing rhizomes.

rhizome - a horizontal, underground stem.

rhombic - a four-sided figure having its opposite sides equal, and its angles not right angles.

rootstock - same as a rhizome.

rosette - a cluster of leaves or other organs arranged in a circle or disc, often in a basal position.

samara - a dry, indehiscent, generally 1-seeded, winged fruit.

saprophytic - a plant which lives on dead organic matter, neither parasitic nor making its own food.

scape - a peduncle arising from the ground, naked or without proper foliage.

schizocarp - fruit of Apiaceae which splits into one seeded sections at maturity.

sepal - a member of the outermost set of flower leaves, typically green or greenish and more or less leafy in texture.

septum - any kind of a partition (septa plural).

seral - a successional species.

serrate - toothed along the margin with sharp, forward-pointing teeth.

serrulate - finely serrated.

sessile - without a stalk of any kind, (see page 208).

seta - a bristle; in mosses, the stalk of the sporophyte (see page 183).

sheath - an organ which partly or wholly surrounds another organ, as the sheath of a grass leaf, which surrounds the culm.

simple leaf - one with the blade all in 1 piece, not compound.

solitary - borne singly,

sorus - a cluster of sporangia on a fern frond (see page 54).

spadix - a spike with small, crowded flowers on a thickened, fleshy axis (e.g. *Lysichiton*).

spathe - a large bract enclosing a spadix (e.g. *Lysichiton*).

spike - an elongate raceme, with sessile or subsessile flowers.

spikelet - a smaller or secondary spike. the ultimate flower cluster, especially in grasses and sedges.

sporangium (plural sporangia) - a structure containing spores.

sporophyte - the spore producing portion or generation of a plant (see page 183).

spur - a hollow appendage of the corolla or calyx; a hollow sac-like, conical, or slender projection of some part of a flower, usually nectariferous (e.g. *Platanthera* spp.) (see page 204).

stamen - the male organ of a flower, consisting of an anther and a filament (stalk) (see page 204)

stigma - the part of the pistil which is receptive to pollen (see page 204).

stipe - the leaf stalk of a fern (see page 54).

stipule - an appendage at the base of a petiole or leaf or on each side of its insertion (e.g. *Lathyrus* spp.).

stolon - a creeping stem on the surface of the ground producing roots.

stoloniferous - bearing stolons.

stoma (plural stomata) - breathing pore or aperture in the surface of leaves or green stems.

style - the slender stalk which connects the stigma(s) to the ovary (see page 204).

subtend - to be directly below and close to, as a leaf subtends its axillary bud.

taproot - the primary descending root (e.g. *Tragopogon*, *Taraxacum*).

tendril - a slender, coiling or twining structure or organ, by which a climbing plant grasps its support (e.g. *Vicia*).

tepal - a sepal or petal, or a member of an undifferentiated perianth.

terminal - at the tip, apex, or far end.

ternate - in 3's (see page 207).

tomentose - covered with tangled or matted woolly hairs.

tuber - a thickened part of a rhizome, generally at the end, serving in food storage and often in reproduction.

tubular - with the form of a tube.

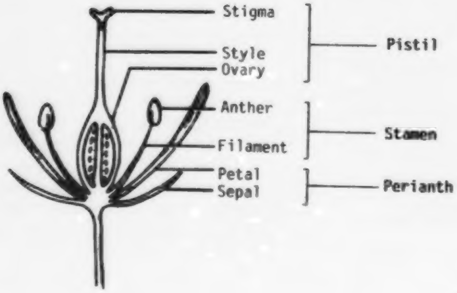
umbel - an inflorescence, more or less flat-topped, in which all of the pedicels arise at the same point, like the ribs of an umbrella.

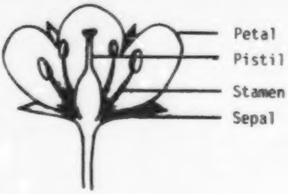
undulate - wavy.

vallecular - pertaining to the grooves between the ridges, as in the fruits of Apiaceae.

FLOWER PARTS

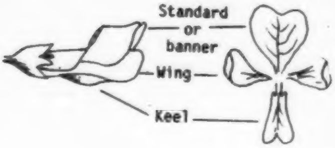
Flower Structure


Stigma
Style
Ovary
Pistil
Anther
Filament
Stamen
Petal
Sepal
Perianth

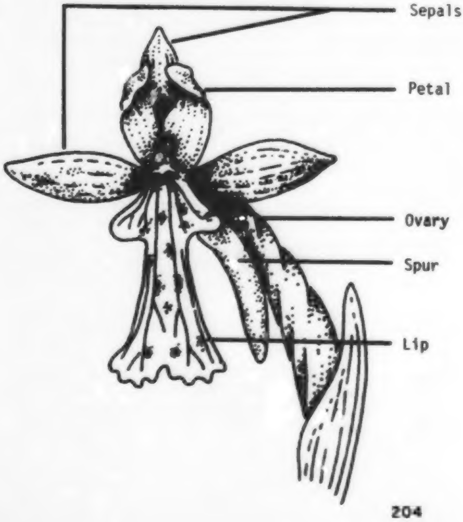

Petal
Pistil
Stamen
Sepal

Calyx-collectively all the sepals of a flower] Perianth
Corolla-collectively all the petals of a flower]

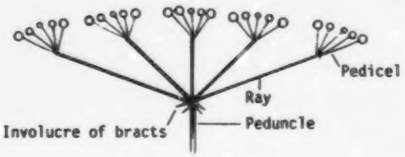
Parts of a Pea Flower *(Fabaceae)*


Standard
or
banner
Wing
Keel

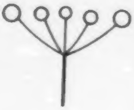
Parts of an Orchid Flower *(Orchidaceae)*


Sepals
Petal
Ovary
Spur
Lip

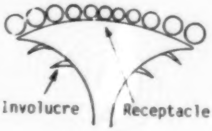
Inflorescences


Pedicel
Ray
Peduncle
Involucre of bracts

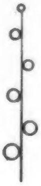
Compound umbel



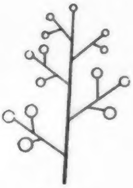
Simple umbel


Involucre
Receptacle

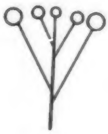
Head (longitudinal section)



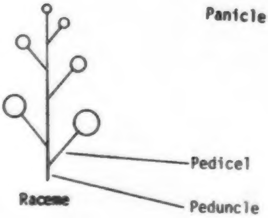
Spike



Panicle



Corymb


Pedicel
Peduncle

Raceme

FLOWER PARTS

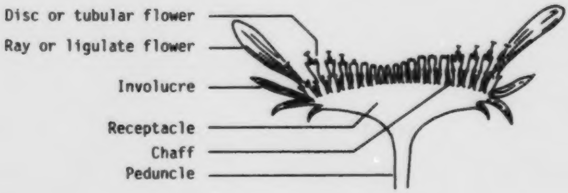
Features of the *Asteraceae* (Aster or Sunflower Family)

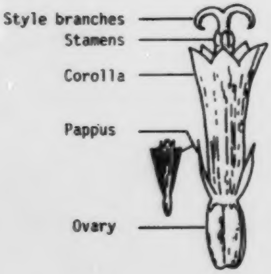
Members of this family are called **"composites"** because what seems to be an individual separate flower is actually **a complex or composite of many flowers in a head attached to a common receptacle** and surrounded by a whorl of what appear to be sepals of the flower but are, in fact, bracts (involucre).

The heads can be of three forms:

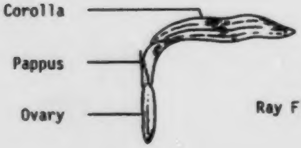
1. Discoid - when all the flowers have the petals fused into tubular corollas (all disc flowers) e.g., *Tanacetum vulgare*, (Tansy), *Antennaria* spp. (Pussytoes).
2. Ligulate - when the corollas are all strap-shaped (all ray flowers) e.g., *Taraxacum officinale* (Dandelion).
3. Radiate when the outer corollas are ray flowers and the inner ones are disc flowers e.g. *Leucanthemum vulgare* (Daisy), *Arnica* spp. (Arnica), *Senecio* spp. (Groundsel).

The receptacle which supports the flower head is often covered with bracts or scales known as **chaff**. Attached to the top of the ovary is a pappus of hairs, bristles, or scales.


Disc or tubular flower
Ray or ligulate flower
Involucre
Receptacle
Chaff
Peduncle


Style branches
Stamens
Corolla
Pappus
Ovary

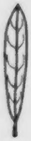
Disc Flower

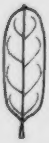

Corolla
Pappus
Ovary

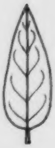
Ray Flower

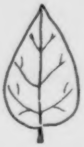
LEAF TERMINOLOGY

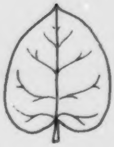
Leaf Shape

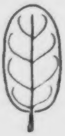

Linear

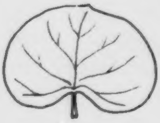

Oblong

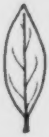

Lanceolate
(Lance-shape)

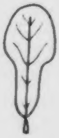

Ovate
(Egg-shape)


Cordate
(Heart-shape)

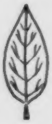

Oval

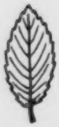

Reniform
(Kidney-shape)

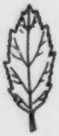

Elliptic

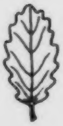

Spatulate
(Spatula-shape)

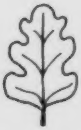
Leaf Margin


Entire

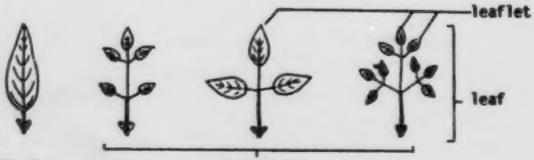

Serrate
(Toothed)


Doubly Serrate


Crenate
(Round-toothed)


Lobed

Leaf Structure



Simple

Compound

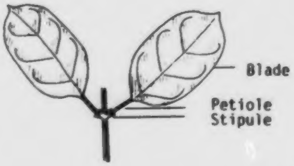
Pinnate

Ternate

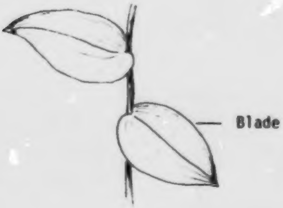
Biternate

Leaf Arrangement

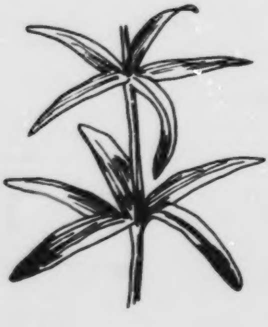
Leaves **Opposite** and **Petiolate** (with petiole)


Blade
Petiole
Stipule

Leaves **Alternate** and **Sessile** (without petiole)



Leaves **Whorled** - 3 or more leaves arranged in a circle around the stem.



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